

Robinson (A. R.)

THE QUESTION OF RELATIONSHIP  
BETWEEN LICHEN PLANUS (WILSON)  
AND LICHEN RUBER (HEBRA).

BY

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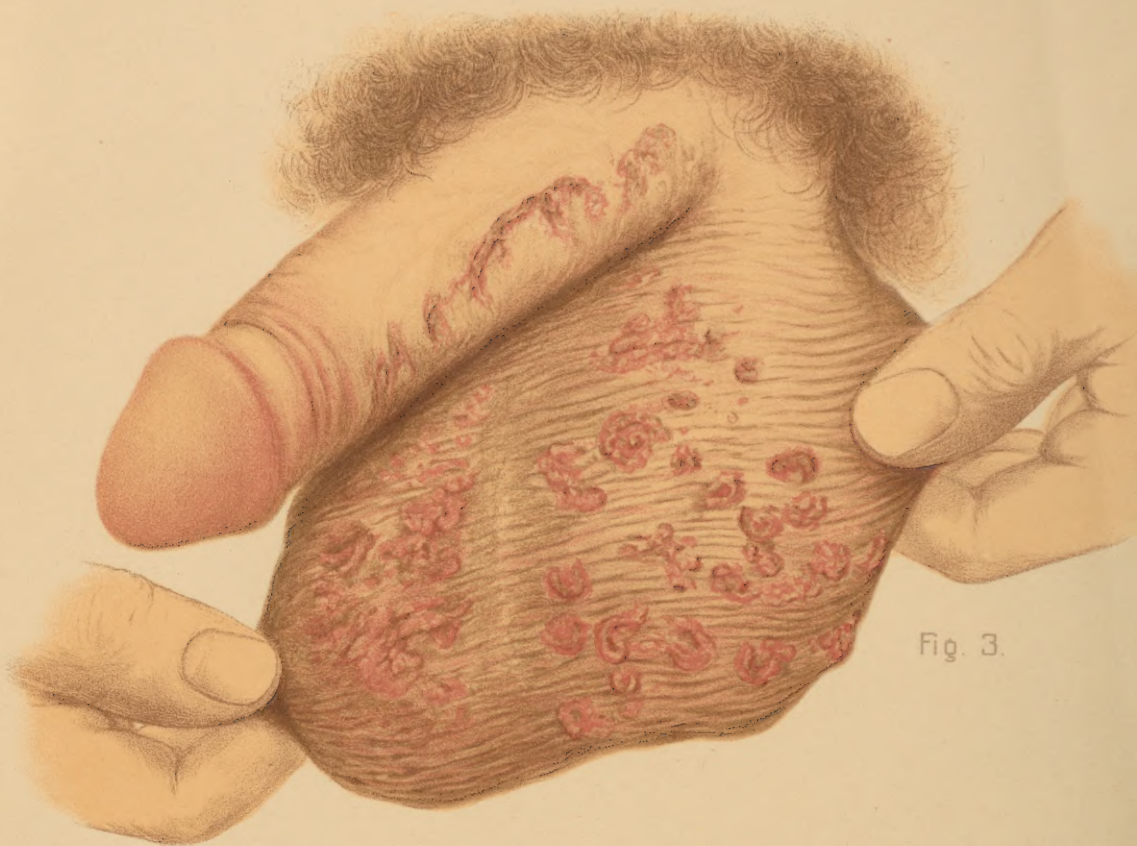


Fig. 3.



Fig. 4.

*Lichen Planus.*







FIG. 1.

*A.R. Robinson, Lichen Planus.*

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FIG.2.







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## THE QUESTION OF RELATIONSHIP BETWEEN LICHEN PLANUS (WILSON) AND LICHEN RUBER (HEBRA).\*

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WITHIN the last few years a great deal has been written upon the clinical characters of the two forms of eruption designated by some as lichen ruber planus and lichen ruber acuminatus, and by others as lichen planus and lichen ruber, and the question of a relationship between them, both clinically and ætiologically, has been a theme of much discussion and some difference of opinion. In this paper I wish to consider the clinical symptoms, histology, prognosis, and the results of treatment by similar drugs of the two forms of eruption described respectively by Wilson as lichen planus and by Hebra as lichen ruber, and from these endeavor to arrive at a conclusion as to the existence or non-existence of a relationship between them. At the same time, I wish to communicate the result of some studies in lichen planus which perhaps have no bearing on the subject of the paper, but which may add something to our existing knowledge of this special form of eruption.

In 1883 ("Lichen Ruber and Lichen Planus," "New York Medical Record," 1883) I wrote an article upon this same question of relationship between the two forms of eruption, and attempted to prove, from the symptoms, course, prognosis, and results of treatment by certain drugs, that they were in no essential characters related, and that they represented two

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\* Read in part before the American Dermatological Association at the Congress of American Physicians and Surgeons in Washington, 1888.

entirely different diseases; but, judging from the subsequent literature upon this subject—and the amount has been very considerable—the arguments I brought in evidence were not of a very convincing character to others, for, with the exception of two writers, the two forms are still regarded in Europe as the result of the same aetiological factor, whatever that may be. In America, Dr. Piffard was the only author who at that time denied a relationship, and, in the classification and nomenclature adopted by the American Dermatological Association, they are placed as varieties of one disease. That American dermatologists, however, have changed their views lately upon this question is shown by the unanimity of opinion at Washington, last September, at the annual meeting of the American Dermatological Association, that lichen planus and lichen ruber are two different diseases.

In my previous article I committed the error of quoting from the second edition of Hebra's work the description of lichen ruber, instead of from the first edition, as I did not possess a copy of the latter. The error was perhaps a pardonable one, as Hebra described in his second edition a flat form of lesion as though it was a common part and partner of the acuminate form described in his first edition; and, as at that time he alone had had sufficient experience with lichen ruber to describe with any completeness its clinical characters, I naturally copied his description, not imagining that he was endeavoring to incorporate a form of eruption first described by Wilson with the disease previously described by himself, although it is perhaps a question if he was familiar with the form of lesions characteristic of lichen planus. Had he mentioned Wilson's name in connection with the flat form of papule he described, the error would not have been committed; but this imperfect description—in my opinion imperfect, as I do not believe in a union of the two forms of eruption upon the same person, or, as I would express it, of the two diseases—in no wise interfered with the validity of the arguments advanced in my article, for they were based upon a study of pure cases of the eruption described by Wilson, and from the description of the first fourteen cases of lichen ruber described by Hebra, together with one case seen by myself. The described differences in the anatomy of the two forms of lesion were conclusions from observations made by myself on typical classical cases of both forms of eruption, and from a study of the descriptions and drawings of sections given by other observers.

In a recent work on dermatology by Dr. Jamieson, of Edinburgh, in discussing the pathology of lichen ruber (he describes lichen ruber and lichen planus as constituting one disease) he states that it can not be at all regarded as settled, and that my observations are confusing on the ground that I regard lichen planus and lichen ruber as quite distinct diseases, and consequently described the histology of the two forms of lesions



separately. This latter is surely a strange criticism to make, for it seems to me that confusion can arise only when the different forms of lesion are confounded with each other, and described without further specification as to form, age, etc., and the reader knows not whether a recent or old, an acuminate or a flat, papule is being described. He who would describe the changes in a macular and in an ulcerating syphilide, for instance, under the head of changes in the skin in syphilis, without separating for purposes of description the two forms of eruption and describing the changes separately, would certainly confuse the reader; and, if this be true in the case of lesions having a similar ætiological factor, and representing but different stages of the same disease, it must also be true in the case of lichen planus and lichen ruber, even if the two forms of eruption represent but different forms of the same disease. If, however, the question for argument is one of identity or non-identity of origin—and that was the question in my paper at the time the anatomical changes were described—it is absolutely necessary to consider the structure of the lesions separately, and, even if their identity in origin should be subsequently proved, the separate description of the lesions could not be confusing. So, also, to avoid confusion, the structure of recent and old lesions of the same disease should be studied and compared if we are to learn the primary and secondary changes which occur in any given cutaneous lesions, especially in those in which there occur marked changes in the circulatory apparatus of the part.

Apart, therefore, from the question of correctness or incorrectness of the description given of the histology of the lesions, it is clear that a separate description of the flat and acuminate lesions as made by me could not lead to confusion to others even if the conclusions I drew from them should prove to be incorrect. The statement made by Róna in the "*Monatsheft f. praktische Dermatologie*" in a recent article, that I had declared the two forms of eruption to represent entirely different diseases, and in no way related to each other, from conclusions formed by the microscopical examination alone of a single case of lichen ruber, is as carelessly made as many others in that same article, for those who have read my article must admit that I denied their identity because I was convinced that the symptoms, course, histology, prognosis, and results of treatment by similar drugs were so markedly different that the two forms of lesions could not have a similar origin or be related to each other in any way.

If it can be shown that the primary histological changes in lichen planus and lichen ruber are different both in anatomical seat and in character, the proof that the lesions have a similar ætiology must be shown before they can be regarded as but different forms of the same disease. If the anatomy of the lesions and the symptoms accompanying each form are different, the upholders of the doctrine of unity, as regards ætiology, must

show a tendency to transition of one form into the other form, or a simultaneous appearance of both forms upon the body; or, finally, that they both depend upon the same ætiological factor, be that factor an organism or some anatomical change in the nervous or other system not parasitic in origin.

As the ætiology of the two forms of eruption is at present unknown, the question of a conversion of one form of lesion into the other form; the conversion of a flat papule into an acuminate one and *vice versa*; of the simultaneous appearance of both forms upon the same person; of the change of form in successive attacks of the disease; and of the similarity in the symptoms and course of the disease in both forms—these are the subjects which I wish to discuss and, from the evidence obtained from their consideration, endeavor to show that lichen planus and lichen ruber are entirely different diseases. After a full consideration of the above questions I will endeavor, furthermore, to show that, from the histology of the lesions alone, there are no grounds for considering them to be produced by the same ætiological factor.

A sufficient number of typical cases of lichen ruber have been seen, since Hebra first described it, for the symptoms and course of the disease to be fairly well known. At the recent meeting in Washington, Dr. George H. Fox reported the histories of five cases, some of which I have seen, and Dr. R. W. Taylor reported two cases under his own care. As regards lichen planus, it is by no means an infrequent disease in America, and every dermatologist of experience in this country must have seen a considerable number of cases. I have conversed with some New York dermatologists on the subject, and they agree with me as to its frequency, so that the clinical history of this disease, drawn as it is from hundreds of cases seen in this country, is already well established and probably complete. The value of the unanimity of opinion among American dermatologists on the symptoms and prognosis of this disease will appear when we discuss the relationship this forms with lichen ruber.

It has been stated by some writers that Hebra's description as drawn from his first fourteen cases is imperfect, and represents only the characters of advanced and severe examples of the disease; but does he not distinctly describe how new lesions form, how the eruption extends, etc., in fact, the whole course of the disease to a fatal termination? That is, he so describes the natural history of his cases that any dermatologist of experience, after reading his description, would likely recognize at first observation an example of the disease.

Whether the cases described by Unna, Boeck, Lavergne, and others were examples of this disease or not is a question of much importance, and must be carefully considered in forming an opinion on the subject of this paper.



With all due respect for the views of other dermatologists and feelings of admiration for diligence and good valuable work, it remains the privilege and duty of every one to criticise with honesty and as much ability as he possesses any opinion or new views upon subjects put forth by co-workers. If we question the diagnosis of an expert in a given case, we must give the reasons for our difference of opinion and refusal to accept evidence from such a case, thus showing our desire to be honest and fair in argument. And, on the other hand, the author criticised must not consider himself infallible and his diagnosis a something under no conditions to be doubted, for a critic has just as much right to make a diagnosis from the written description of a case as the reporter of the case from the living subject. So, if in the following pages we differ in diagnosis from the opinion of our equals in dermatology, it will be not without a firm belief in the correctness of our view and an honest desire to arrive at a correct solution of the question being discussed.

In this paper no attempt will be made to give a complete account of the symptoms of either lichen planus or lichen ruber, but only such characters will be described as are necessary for the discussion of the subject of the paper.

According to Erasmus Wilson, lichen planus is a disease of the skin characterized by the formation of papules remarkable for their color, shape, tendency to arrangement in groups, situation, local and chronic character, and the pigmentation they frequently leave when they subside. As our knowledge of the disease has increased since he wrote upon the subject, I will add to his description or modify his statements according to the experience of the present day. Lichen planus is such a frequent disease in America—certainly several hundred cases have been seen and studied by American dermatologists—that its clinical symptoms, course, and tendencies are sufficiently well understood to enable one to discuss the question of any relationship between it and the disease described by Hebra as lichen ruber.

In the description of the eruption I will follow the order of characteristics as given by Wilson:

*Color.*—The color of the lesions in very small and of recent papules is a light red, which soon assumes a duller red, frequently suffused with a purplish tinge, and when of long standing or arranged to form patches, they are of a dusker hue. If the part occupied by the lesions is in a condition of passive hyperæmia, the papules have usually the dusky-red hue well marked, while in isolated lesions on non-dependent parts the color assumes at most a dull red. In many cases the color resembles exactly that present in a papular syphilide, while in others it is similar to that of eczematous or other cutaneous lesions.

*Shape.*—When very small the lesions are round in form, or nearly so, but

when larger they are generally more or less angular in outline and rise abruptly from the skin. They vary in size from that of a very small pin-head to that of a split pea or somewhat larger, are slightly elevated above the level of the general surface, and have a smooth, flat, shining surface which sometimes shows a depressed center. This umbilicated condition of the lesions is not so frequent as one would imagine from reading Wilson's description, and in many cases, although the number of lesions present may be considerable, it is absent in all of them. I am not aware that it has been seen in lesions situated on a mucous surface. In the few cases of lichen planus which I have seen with the eruption upon the palms of the hands, the lesions were sharply limited and dark red in color, but were slightly, if at all, elevated and not so angular in form as when situated on other parts of the cutaneous surface. If any isolated lesions are situated around a hair follicle—an unusual occurrence—they are roundish in form and may be covered with a small scale, thus bearing a close resemblance to the lesions present in some cases of perifollicular eczema.

In the most recent and in small isolated lesions the surface is shining and devoid of scales, with the rare exception mentioned above; but in older and larger papules there appears to be a thin layer of horny transparent cuticle present. I am not aware that marked scaliness has ever been observed on isolated pea-sized lesions; but when the eruption is diffuse and the papules closely situated so as to form a patch in which the interpapular skin has become implicated in the pathological process, there is generally desquamation and scaling, especially if the part has been irritated or is situated on the lower extremities. Where the patch is made up of more or less incompletely isolated papules, the amount of scaling may be very slight or even absent. In one of my cases in whom the eruption existed several years upon the knee the scaling was very slight indeed; in fact, could be described as being absent. (See Fig. I.)

When scaling is well marked and there are no lesions outside of the scaly patch, it may be impossible to diagnosticate the disease from a patch of psoriasis or of chronic scaly eczema of the leg in a gouty or rheumatic subject, especially if passive hyperæmia is present.

*Course.*—A pin-head-sized papule usually increases in size by peripheral extension until it is as large as a split pea or larger. When situated on a mucous surface of the mouth or on the glans penis there does not seem to be the same limit to its amount of extension; at least the long, narrow patches of infiltration seen in these regions can not always be traced to a coalescence of previously isolated lesions. Wilson states that the lesions do not increase in size subsequent to their first appearance on the skin, but the growth in size of individual papules from a pin-head-sized to a split-pea-sized lesion is a frequent—I should say, I believe, a usual—occurrence; that is, that the larger papules were previously small ones.



An extension of the primary lesions to form patches in the manner observed in psoriasis does not in my experience occur unless it be on the mucous membrane of the mouth, on the penis, or on the lower extremities. In the two latter situations I have seen and studied for a length of time patches which seemed to spread in that manner—at least, I was unable to detect at the spreading periphery any signs of new papules forming; the only symptoms were those of a gradually extending inflammatory infiltration.

When patches form, they are sharply limited, elevated, violet or bluish-red or dark-red in color, and usually covered more or less with scales, although, as already mentioned, the latter are not always present. The skin beneath the scales is often uneven, warty in appearance, and occasionally, especially in long-standing cases, are to be seen in greater or less number white, milium-like, pin-head-sized spots which can be dug out, and, when examined, are found to consist of epithelium. Sometimes as many as a dozen of these white spots can be seen in a large pea-sized papule. They have been described as situated in follicle orifices, but we will see later on that that view is not a correct one. In Fig. II of colored drawing, a number of these whitish bodies can be seen in the upper left part if the drawing is closely examined. The chronic thickened patches correspond to the *lichen hypertrophique* and the scaly ones to the *lichen corné* of French authors (see Fig. I). The term *lichen verrucosus* has been applied to the chronic form of the disease when the lesions show great thickening and induration of the skin. In these cases the surface may be like plush (Jamieson), or rough and horny, and the scales are firmly adherent.

The life-duration of individual papules is usually a long one, and I have had patients who maintained with positiveness that they have seen lesions lasting for years before disappearing. When they subside they usually leave pigmentation and atrophy of the part behind; but if the lesions are small and their life-duration comparatively short, this condition may not result.

*Arrangement.*—The papules are either discrete or aggregated, but they generally show a tendency to form groups. Occasionally they are arranged as broader or narrower, larger or shorter bands. In one of Kaposi's cases the arrangement of the papules to form bead-like rows was very remarkable. Lesions show a tendency to form where the skin has been injured by scratching or friction, so that it is not unusual to find lesions arranged in a bead-like form along a red line corresponding to the part scratched. As the result of scratching we also see, not infrequently, lesions of an eczematous character, but these are of short life-duration and give evidence of the occurrence of serous exudation from the blood-vessels. The serous exudation resulting from scratching may be sufficient to produce bullæ. They have been described as an occasional symptom of the disease and

arising independent of external irritation, but I have never seen them arise except from the above-named cause. They are observed especially in connection with old, thickened, non-scaly patches formed by large papules.

In addition to the large and small papules previously referred to, Unna describes, under the head of lichen planus proper, lesions of considerable size which are but slightly, if any, elevated above the general surface, and are sharply limited. He thinks they can assume this form *d'emblée*, instead of by aggregation of small papules. All who have seen many cases of lichen planus must have observed such shaped patches or lesions, but I do not think that they represent a special form of the disease, as they arise, usually at least, from a coalescence of very small papules, the most recent lesions arising at the periphery of the patch and thus causing it gradually to become larger. As, however, papules can be produced by external irritation, there are no reasons why a patch the size, say, of a fifty-cent piece should not suddenly form from the same cause. For myself, I have not seen a patch form thus suddenly, but if it does occur that would, to my mind, be no reason for making this form of lesion a special form of the disease, as I believe that in the majority of cases it is produced by an aggregation of small papules.

As the papules in this disease have no definite size or form, but all the forms and sizes above described are usually met with on the same person, it seems to me that the term lichen planus as employed by Wilson is preferable to the division made by Unna into lichen planus and lichen obtusus.

*Situation.*—The eruption is generally symmetrical and appears especially upon the anterior surface of the forearms, just above the wrists, but it may appear upon any part of the body, and especially upon the lower part of the abdomen, the calves of the legs, and anterior surface of the knee. It has been observed upon the mucous membrane of the mouth, tongue, and fauces.

The eruption is not only sometimes not symmetrical, but it may remain limited to a single spot or to one side of the body for a length of time before appearing elsewhere. In one of my patients the eruption was confined to one knee for more than four years.

The disease rarely if ever attacks the nails. One of the cases reported in which this was said to have occurred was that of a washerwoman, and we all know the liability of their nails to abnormal conditions from their occupation. Touton ("Kasuistisches zum Lichen ruber planus der Haut und Schleimhaut," "Berl. klin. Wochenschr." 1886, No. 23) describes a case in which the eruption was very severe on the hands, but the nails remained unaffected. I have no doubt but that a number of such cases could be reported. There are no reasons, probably, why the nails should remain unaffected, but there is certainly no tendency of the disease to



invade these structures, no matter how extensive the eruption may be on the rest of the body.

*Course.*—The course of the eruption is very chronic, and the disease may remain limited to a small region of the body for many years, and finally disappear without showing any tendency to extend to other parts. In one of my cases the eruption existed on the scrotum eighteen years, and upon the knee and one ankle for a shorter period. Sometimes the eruption spreads rapidly over a large area, as in the following case: Sarah L., aged thirty-two, married. Eruption commenced three months ago on the arms, back, and lower extremities. On the right arm there are from fifty to sixty lesions, mostly upon the flexor surface, and varying in size from that of a pin-point to that of a small pea. The smallest ones are round in form, and have a well-marked shining surface. As the lesions become larger they are irregular in shape. A large number even of the smallest lesions show a depressed center. In some of the large ones there is a visible sinking in of the central portion of the lesion. No acuminate lesions are present. Some of the larger lesions showed a slight tendency to scaling. On the left arm similar lesions to the above-described ones are present. Upon the back there are probably a couple of hundred lesions irregularly distributed or arranged in groups or rows. The majority have a depressed center, and there are no acuminate lesions. Only a few papules are present on the anterior surface of the thorax, and the face and neck are free. Upon the lower extremities the lesions are situated on the leg and lower part of the thigh. They are larger than those upon the upper extremity, are darker in color, not so grouped or sharply limited, have no depressed center, and are not so flat. Slight scaling is to be observed in some cases. On the right leg, at the inner side of the knee, there is a large, irregularly shaped, sharply limited, red, elevated, and non-scaling patch composed of many primary lesions with shining surfaces. On the leg there are many lesions of variable size, not always sharply limited, and of a reddish color, the redness disappearing somewhat upon pressure. In one place there is a patch where the epidermis is much thickened and the surface has a warty appearance. In a few months the eruption disappeared without the use of arsenic or any local application. Her general health showed no signs of deterioration. Her physical condition was excellent; she was an example of the class of the apparently well-nourished German women familiar to New York physicians.

It has been stated by some writers that the general health is frequently affected in cases of lichen planus. My own experience, which agrees with that of all dermatologists in America with whom I have spoken upon the subject—and this combined experience must include a large number of cases—is that patients affected with this disease are as well nourished and otherwise in as good physical condition as the subjects of any other skin-

disease; that is, they rarely complain of anything except the skin affection, and, if they do complain, the condition is certainly not the result of a marasmic condition; and, furthermore, I have never seen a case, and my friends have not seen a case, no matter how long the disease has lasted, in which there was any danger of a marasmic condition resulting from or in connection with the condition causing lichen planus. As will be referred to later on, a number of my patients have had rheumatism or suffered from malarial infection, and I have attributed the predisposing cause—at least, in certain cases—to one or other of these conditions; but the lichen planus had for me no more serious import than if the eruption had been an eczema in connection with similar conditions.

The prognosis, then, in untreated cases of this disease is absolutely favorable as regards the general nutrition of the subject; there is no special tendency to its becoming general over the body, and there are no reasons for supposing it to have any relation to grave nutritive conditions of the system, or that it causes such conditions of the organism.

In reviewing the symptoms of the disease as briefly given above, we find that a diagnosis of lichen planus can not *always* be made from the color, grouping, or shape of the individual lesions alone, but that in difficult cases all the characteristics of the disease, including the life-duration and the pathologico-anatomical course, must be taken into consideration. The presence of a few papules—red in color and angular in shape—upon the skin, for instance, does not justify one in saying that the disease lichen planus is present any more than the presence of a diphtheritic membrane upon a wound justifies the view that the infectious disease diphtheria is present. The diseases with which it is specially liable to be confounded are syphilis and eczema. In a papular syphilide the color, situation, grouping, and shining character of the surface of the lesions may be similar, and a positive diagnosis be impossible at the first observation of the patient. Such a case was recently exhibited at a meeting of the New York Dermatological Society, and, although the number of lesions was very great, the members of the society were divided in opinion as to whether the case was one of syphilis or lichen planus. This case proves conclusively that the lesions of syphilis and lichen planus may be exactly similar in objective characters.

A follicular eczema of the lower extremities, especially in old persons with a feeble peripheral circulation—a passive hyperæmia—of the part, is often characterized by lesions very similar in appearance to those of lichen planus of this region, the color, arrangement, itching, rarity of vesicle-formation, and chronicity of the disease making the similarity sometimes very great and the diagnosis difficult. Cases which I would call undoubted cases of follicular eczema have been under my observation and treatment after having been treated for many months by other capable dermatolo-



gists of much experience for lichen planus. In these cases I did not make the diagnosis from the color, size, or shape of the lesions alone, but upon the anatomical seat and the life-duration of the individual lesions. In eczema the life-duration of a single lesion is not long; the existing lesions tend to disappear after a few days, and new ones arise. It is also unusual for isolated lichen-planus lesions to form around hair follicles. Furthermore, in eczema the lesions are rarely so localized as in lichen planus, and there is not the tendency to grouping of the lesions as observed in the latter. Nevertheless, the lesions may be grouped, and have the other objective characters of the lichen-planus lesions, and a diagnosis be impossible unless it be by studying the life-duration of the single lesions.

A *single* patch of chronic scaly lichen planus situated upon the leg may resemble exactly a patch of chronic scaly eczema or a patch of psoriasis. The diagnosis in this case is to be made by a history of the case and a study of the rest of the body. That the patch alone can not be diagnosed shows that the lesions of lichen planus are not peculiar to the disease.

As regards the shape of the papules of lichen planus, they are not always angular in outline and umbilicated, but they may be roundish and have a perfectly flat or slightly rounded surface; but, even when angular in outline, and with a depressed center, that form is not pathognomonic of lichen planus. I have frequently observed, especially upon the flexor surface of the forearms, near the wrist, an eruption of acute inflammatory papules, round or angular in outline and with a pin-point-sized depression in the center, which, from the history of the case and a study of the course of the lesions, could not be regarded as a lichen planus, but as an eczema, the lesions being situated probably around an excretory sweat-duct outlet, and the inflammation not intense enough to produce vesicles. In this case the short life-duration of the lesions and an examination of the rest of the body enable one to make a diagnosis sooner or later. There are other examples of eczematous lesions met with in old rheumatic or gouty subjects, and in younger fleshy persons who sweat considerably, in which the eruption resembles the large flat papules or small patches of lichen planus. These lesions I have seen principally upon the face and back of the hands, and, although I have always excluded the disease lichen planus in these cases, the reasons for doing so were sometimes not very definite, the opinion being more the result of experience from previous cases than formed from the character of the lesions at the time.

In a pure papular eczema there may be many of the lesions resembling in all objective characters papules of lichen planus, as in the following case:

A. B., boy, aged seven years. Eruption appeared eight days ago and occupies face, trunk, and extremities, being greatest in amount upon the face

and extremities. The eruption was papular throughout and no vesicles were to be observed, although there were several hundred lesions present. The itching was severe. Appearance of eruption : On the back of the right hand there is a number of lesions the size of a pin-head or larger. The small ones are elevated, sharply limited, have a flat, shining surface, and occasionally a small depression in the center. Some of the larger lesions are irregular in outline, and have a flat, shining surface and a depressed center. They are sharply limited, deep-red in color—not violaceous. Mixed with these flat lesions are acuminate papules of similar size. On the extensor surface of the forearm there is a greater number of lesions, and, as a rule, they are larger than those upon the hand. The majority of them are acuminate and some are covered with a blood-crust caused by scratching. Some of the papules are polygonal-shaped and have a flat, shining surface, and occasionally a central depression can be observed. The left arm and hand presented similar lesions to those upon the right. The flat lesions in some places were grouped and in other places irregularly distributed among the other lesions. As regards the objective characters, these flat lesions resembled exactly the smaller lesions of lichen planus. Upon the cheeks and forehead there was a large number of papules, all more or less acuminate, and those upon the forehead showed but slight inflammatory redness. On the legs the lesions were similar to those upon the arms. Upon the left knee were several polygonal-shaped lesions with a flat and very shining surface.

Here was a case of undoubted lichen simplex or papular eczema, whichever you choose to call it, and yet there were many lesions present which resembled exactly lesions observed in lichen planus, even if there were no distinct obtuse lesions with a violaceous tinge.

Finally, a disease with an acuminate papular eruption on those parts of the body where the corneous layer is thin may appear as flat papules where this layer is thick, as on the palms of the hands and the soles of the feet. A case of lichen ruber of Hebra has been reported as showing a union of this disease with lichen planus, because upon the palms and soles the lesions were flat. Such a case certainly is no proof of a union between the two diseases.

Knowing what a frequent disease syphilis is, and knowing also how frequent eczema is, and having learned how closely the lesions of these two diseases may resemble those of lichen planus—so closely that from the objective characters of the lesions a diagnosis can not always be made—one must admit, it seems to me, the mistake of regarding the presence of a few papules of the form and color of the lesions of lichen planus as proof of the existence of this special disease, especially if they are situated in unusual situations for this disease. If the symptoms, arrangement, situation, course, etc., of the lesions are such that the diagnosis of lichen planus should be made, then, if found in connection with an undoubted case of lichen ruber of Hebra, that would be proof of the presence of the



two forms of eruption—the two diseases—upon the same person. Of course their conjoint presence would not be any proof of similarity of ætiology any more than the presence of eczema and syphilis upon the same subject.

In my opinion, then, the presence of dark-red, round or polygonal-shaped, flat papules, with or without a depressed center, and which show no tendency to become vesicles, justifies the diagnosis of a lichenoid eruption, but not of the disease lichen planus. For the latter diagnosis the clinical symptoms must correspond with those of undoubted cases of the disease. This is a point upon which I wish to lay much weight, for in some of the cases reported in which lichen planus has been reported as existing in connection with lichen ruber the lesions did not correspond, as regards number, situation, grouping, etc., with those of ordinary lichen planus, and consequently, in my opinion, should not be accepted as examples of that disease when discussing this question of relationship.

The same difficulty will be encountered when we come to discuss the significance of acuminate scaly lesions.

*Prognosis.*—In untreated cases the disease may last many months or years, but it never shows any tendency to produce a marasmic condition of the system or to lead to a fatal result. The eruption also is inclined to remain localized and not to extend over a large area or become general over the cutaneous surface. When it does extend over a considerable surface the general health does not seem to be more affected than when the disease remains localized. It shows no tendency to attack the face, hair, or nails, although by that statement I do not wish to maintain, as some authors would have it that I do, that these parts are absolutely exempt from the eruption.

*Histology.*—The changes occurring in the skin in lichen planus have been studied by Colcott Fox, Crocker, myself, and others. Colcott Fox ("British Medical Journal," 1880, p. 398) thinks the disease should not be classed among the inflammatory affections of the skin, as he considers no true inflammatory action is present. According to this observer, the papules owe their origin to persistent neuro-paralytic hyperæmia and its results; namely, dilatation of the blood-vessels and engorgement of the tissues with blood, emigration of leucocytes, œdema, hypertrophy of the various structures, and slight desquamation. Crocker ("Lancet," 1881, p. 284, and "Diseases of the Skin," 1888) describes the anatomy of the lesions as follows: "A vertical section through a recent papule reveals a mass of cells like leucocytes, and imbedded in this are sometimes seen fragments of the fibers of the corium, in the most superficial part of which the effusion has taken place. The condition of the rete varies. When the effusion of leucocytes is considerable—*i. e.*, when the process is acute—the rete is forced upward and is very little thickened, or indeed may even be thinned in the center, slight thickening being evident at the sides only and in the immediate neighborhood of the papules.

When the inflammation is not so acute, the rete is greatly thickened. The thickening compresses the cell effusion below it, and obliterates some of the papillæ, while others are enlarged by the downgrowth of the inter-papillary processes. Thus, in the one case the cell effusion, and in the other the thickened rete, forms the papule. The horny layer is only slightly thickened except in the center of the papule in the less acute form, where it forms a sort of conical plug fitting into a depression of the rete, its apex corresponding to the orifice of a sweat duct. The desquamation of this plug is the cause of the central depression. In a papule with a hair in the center there was thickening of the rete adjoining the hair-follicle, slight effusion at the angle of the follicle and rete, and perhaps slight thickening of the upper part of the hair-follicle; the lower part was entirely unaffected. In sections from the border of a patch there was enormous thickening of the rete."

Lemoine, G. ("Note sur une variété de lichen plan," *Annales de dermat.*, 1883, p. 327), examined a hypertrophied papule and found the epidermis thickened, the papillary layer the seat of active inflammation, and the deep part of the corium sclerosed. The corneous layer was greatly developed, forming thick layers, which sometimes passed deeply into the derma. The superficial part of the corium was composed almost exclusively of embryonic corpuscles which invaded the papilla and took the place of the normal tissue. There were many pigment granulations disposed in groups around the blood-vessels. In the deep derma were many elastic fibers; the connective tissue was close-meshed; the sweat-gland coil was surrounded by sclerosed tissue, and outside that a round-cell collection, while the epithelium showed signs of inflammation. The rete varied in size, the first row of cells had disappeared, and the granular layer was very thick. He considers the process an inflammatory one, commencing in the walls of the blood-vessels, and thinks that the arterioles and capillaries of the deep derma are first affected, and that the epidermis is affected last.

According to Neumann ("Lehrbuch der Hautkrankheiten," 5 Aufl., Wien, 1880), the whole process is a circumscribed inflammation, especially of the upper part of the cutis, with a special affection also of the sweat-glands. An examination of the drawings of lichen ruber and lichen planus, in Neumann's work, will show how different the anatomical changes are in the two diseases.

Caspary, J. ("Ueber Lichen ruber," *Vierteljahrs. f. Derm. u. Syph.*, 1888), examined recent and old papules, and found in the former the upper part of the corium infiltrated with round cells—an inflammatory condition, and not a parakeratosis, as described by Auspitz. In old papules the epidermis was elevated by degeneration and disappearance of the infiltrated subepithelial connective tissue.



In Kaposi's case of lichen ruber moniliformis—a case of lichen planus—inflammatory changes similar to those described above were present.

My own observations, published in 1883 ("Lichen Ruber and Lichen Planus," "New York Med. Record"), showed that the papules of lichen planus owed their origin primarily to an inflammatory process occurring in the papillæ and upper part of the corium, although in old lesions there is also hypertrophy of the epidermis. As I have studied many sections since that paper was published, I will here describe the appearances found in the different sections:

In Fig. 1 is shown under a low power a section of two very small pin-head-sized papules so closely seated that, according to the naked eye, very little normal tissue was present between them.

The papules were elevated, reddish in color, roundish, and had a flat, shining surface without a central depression. The lesions were from an area in which many violaceous, angular, flattened papules with a central depression were present. The section is drawn with a low power, and the lesions were not of very long standing. The corneous layer was thicker than normal throughout the whole extent of the section, but was least thickened in the central part which corresponds to the space between the papules. The cells in this section were not flattened to form dense layers, but the contour of the individual epithelia is well marked. The cohesion between the epithelia was not great, as shown by the spaces free of cells. The stratum lucidum could not be distinguished, and certainly was not increased in size. The granular layer of the rete was thickened over the papule area, and the granules very distinct, so that this part of the section colored with hæmatoxylin appeared as a dark-bluish band. The rete was thickened very much in the papule on the left side of the drawing (the one nearest *b*), and in the other papule it was also thickened, although not to the same extent. The interpapillary projections extended here and there deep downward into the corium, and in other parts they were absent. The direction of these projections was generally downward and outward from the center of the papule, and sometimes at the periphery of the lesion they were more inclined to a horizontal position. The papillæ were either absent, a result probably of the round-cell collection beneath, or

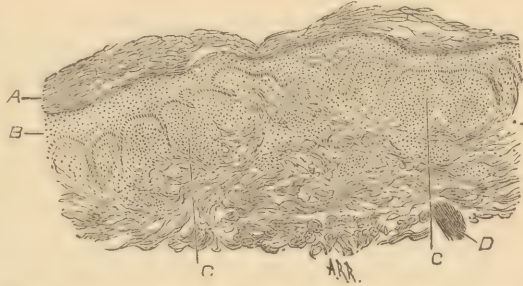


FIG. 1.—SECTION OF TWO SMALL PAPULES OF LICHEN PLANUS.

A, corneous layer; B, rete; C, cell collection in upper part of corium and papillæ; D, muscle bundle.

appeared much enlarged from the increase in length of the interpapillary rete. In the parts of the section corresponding to the lesions the connective tissue directly beneath the rete contained only a few round cells, and there was very slight inflammatory changes of the tissue, but the greater part of the papillæ and the upper portion of the corium was filled with round cells, the collection being pretty sharply limited both at the sides and base (*c*). Where this collection was very dense the normal structure of the part was no longer recognizable, but at the margin and deeper part of the corium the round cells were present around the blood-vessels, and not limited to the upper side, as mentioned by Colcott Fox. The tissue of the deeper parts of the corium was unchanged except in the blood-vessel area, as already described. The muscle bundle (*m*) did not appear to be hypertrophied. The cell collection in both papules was about equal in amount, while the rete in one was not much changed, so that the cell infiltration was not likely produced by pressure upon the corium by the thickened rete.

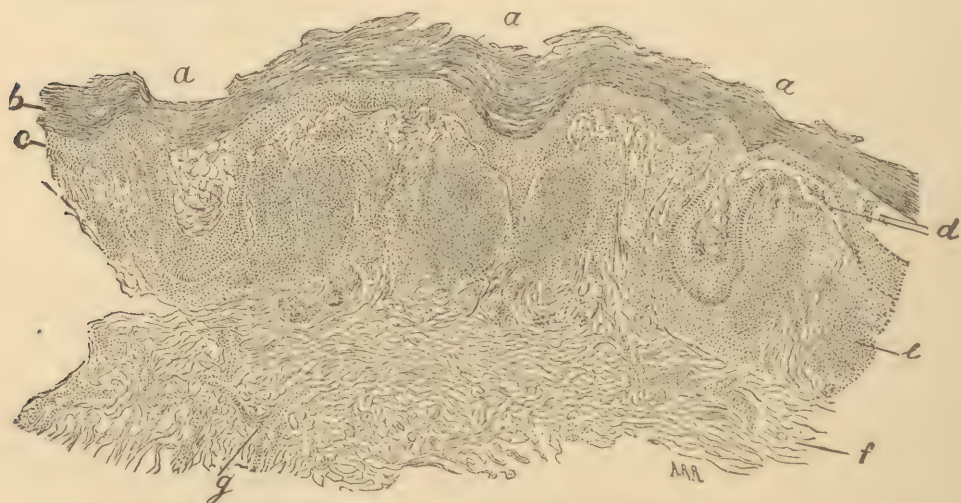


FIG. 2.—SECTION OF A RECENT PAPULE OF LICHEN PLANUS.

*a*, situation of hair-follicle orifice; *b*, corneous layer; *c*, rete; *d*, space between rete-epithelia, and between rete and corneous layer, containing exudation from blood-vessels; *e*, round-cell collection in papillæ and upper part of corium; *f*, deeper part of corium; *g*, round-cell collection about blood-vessels.

In Fig. 2 is represented under a low power a section of a papule of several months' duration, according to the patient. The papule, the size of a small pea, situated over the skin, was sharply limited, elevated, red, and showed neither scaling nor a central depression. There was a large number of similar lesions upon both legs, and some upon the forearms. In this section the corneous layer was greatly thickened, and the cells were arranged to form dense lamellæ. Looking at the thickness of this layer,



and the unevenness of its upper part, it seems strange that there was no desquamation present. The stratum lucidum was indistinct. The granular layer was thicker than normal in some parts, and not in others. The rete was but slightly increased in thickness, and the cells were lying, as a

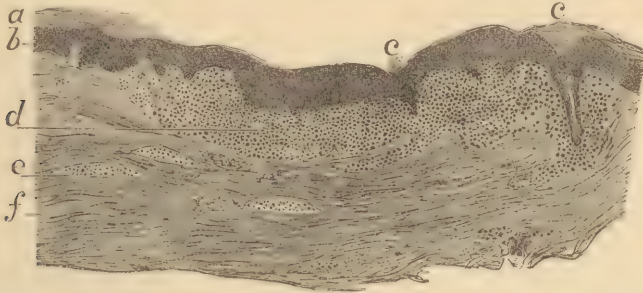


FIG. 3.—SECTION OF A PAPULE OF A LICHEN-PLANUS LESION AND SOME NORMAL SKIN ON BOTH SIDES.

*a*, corneous layer; *b*, rete; *c*, orifice of sweat-duct; *d*, round-cell infiltration; *e*, blood-vessel; *f*, deeper part of corium.

rule, with the long diameter in a horizontal direction. There was no increase in length downward of the interpapillary rete. The papillæ were not enlarged. The corium showed changes similar to those described as existing in Fig. 1, except that the round-cell collection was very slight, as a rule, in the papillary and subpapillary portion of the corium. The inflammatory exudation of a serous character was of sufficient nature at one point to cause a transudation into the epidermis and produce a microscopical vesicle (see *d*). This condition was probably caused by external irritation (scratching?). In this section the inflammatory changes, as shown by the very great round-cell collection in the corium, appear to be the principal part of the pathological process. The cell collection here is too deeply seated to arise from pressure by the rete even if this structure were thickened, but the increase in thickness was too slight to exert any irritant action. No sweat-glands were present in this lesion, and the papule was not umbilicated.

In Fig. 3 is represented a vertical section of a papule of a few weeks' duration, the section including some of the surrounding normal skin, especially on the left side. The papule corresponds to the dense, round-cell collection to be observed in the papillary region and upper part of the corium. The corneous layer over the papule was very thin, consisting of one or two layers of flat, horny cells. This thinness of the corneous layer was observed in both recent and old papules in which there was a depressed center, and consequently is not an artificial condition resulting from manipulation of the section. Whether the corneous layer was previously thicker than normal and desquamated later, or was imperfectly developed

from the commencement of the papule formation, I am not capable of stating. Outside the papule region the corneous layer appeared to be normal. The granular layer was very much thickened. The rete was thickened in some places, especially in the central part of the papule-area. Papillæ were absent over the greater part of papule region. The papillary layer and upper part of the corium were occupied by a sharply limited dense round-cell collection, as in the other sections. At the periphery of this cell-collection the blood-vessels were dilated and filled with corpuscles, and a considerable number of emigrated corpuscles was present in the perivascular region. The deeper portion of the corium appeared to be normal, except that some of the blood-vessels were dilated and surrounded by a few emigrated corpuscles.

In Fig. 4 is shown a section of a similar papule to that drawn in Fig. 3, but under a higher power. The corneous layer is absent. The rete is thicker than normal, and the epithelia throughout its whole extent are

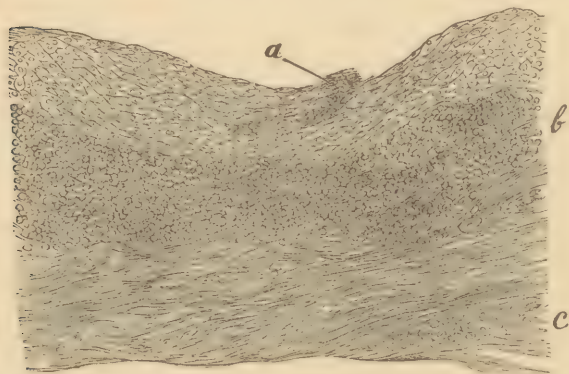


FIG. 4.—SECTION OF A PAPULE OF LICHEN PLANUS MORE HIGHLY MAGNIFIED THAN IN FIG. 3.

*a*, orifice of sweat-duct; *b*, round-cell collection in upper part of corium; *c*, region of a blood-vessel.

more or less flattened, with the long diameter parallel to the general surface. This flattened condition of the epithelia of the rete is characteristic of many papules of lichen planus, and I am inclined to regard it as depending upon the cell infiltration beneath pressing upon them while from some cause (sweat-duct?) they are prevented from escaping by

change of place from the pressure. According to Boeck, it is the result of an expansion in a horizontal direction of the epidermis. The granular layer was very thick, consisting of five or six layers where the rete was thick. This thickening of the granular layer is almost always present in lichen planus, and may vary much in amount in different parts of the same section. The thickness of the rete varies also very much, but in sections examined by me it was usually much hypertrophied in the sweat-duct area. In many places within the area of a recent papule it may be unchanged, or even appear as though it were thinner than normal.

In Fig. 4 the papillæ are no longer discernible, the dense cell collection in the corium and the flattened rete being so closely united that in many



places no line of separation could be seen. This cell collection is as dense and as sharply limited as in the syphilitic papules, and hence produces a lesion having many similar objective characters—as elevation, sharp limitation, density, color, and shining surface. In Fig. 4 almost all trace of the original connective tissue of the part is lost and its place is occupied by this round-cell collection. When the round cells undergo later a fatty degeneration, there must be an atrophy at the seat of the lesion, just as in syphilis. In the deeper parts of the corium the changes are similar to those already described. At *a* is seen the orifice of a sweat-gland, and as this structure has been observed by Crocker and others as well as by myself in umbilicated lesions, and running through the central part of the papule, it seems reasonable to suppose that it is the principal cause of the small depression to be observed in many recent lesions. That this central point does not depend upon anatomical changes in the elements of the papule is shown by its frequent absence from lesions. This central pin-point depression should not be confounded with the depressed center seen in lesions undergoing a degenerative change. This latter results from a sinking in of the central part of the papule, and in some cases, at least, from the thinness of the corneous layer, as in Figs. 3 and 4. Some of the early observers of lichen planus stated that the small central depression corresponds to a hair-follicle, but microscopical examination by Crocker and myself has shown that lichen-planus papules rarely form around hair-follicles, and consequently the naked-eye guess of the cause was not a fact in this case.

From the above study of the appearances presented by recent lesions of lichen planus, it is clear that the process is an inflammatory one, and not primarily a hypertrophy of the epidermis either of the rete or of the corneous layer. The inflammatory process occurs especially in the papillæ and upper part of the corium, and the cell infiltration from the upper subpapillary horizontal plexus of blood-vessels does not come from the upper surface of the vessels alone as the cells surround the vessels; and the same is true of the vessels which do not run horizontally. The changes observed in recent papules in the corneous and rete layers are so variable that they can, I think, be regarded as secondary conditions.

It has been stated that the lesions of lichen planus are never vesicular in character, although bullæ have been observed by some writers, and I have seen vesicles form after scratching a patch of chronic lichen planus. The patient from whom Plate II was taken informed me that vesicles were liable to form beneath the white pin-head-sized points unless she removed these bodies.

In Fig. 5 is shown a microscopical vesicle from a patch of chronic lichen planus. The serous collection is situated in the lowest part of the rete, the base being formed of flattened, ill-defined rete epithelia, and the

contents consisting of clear liquid and a little granular detritus. This section shows a greatly thickened corneous layer, a thickened granular layer, a thickened rete, and a corium infiltrated with exuded round cells. The granular layer is apparently very thick at one part, but that is because

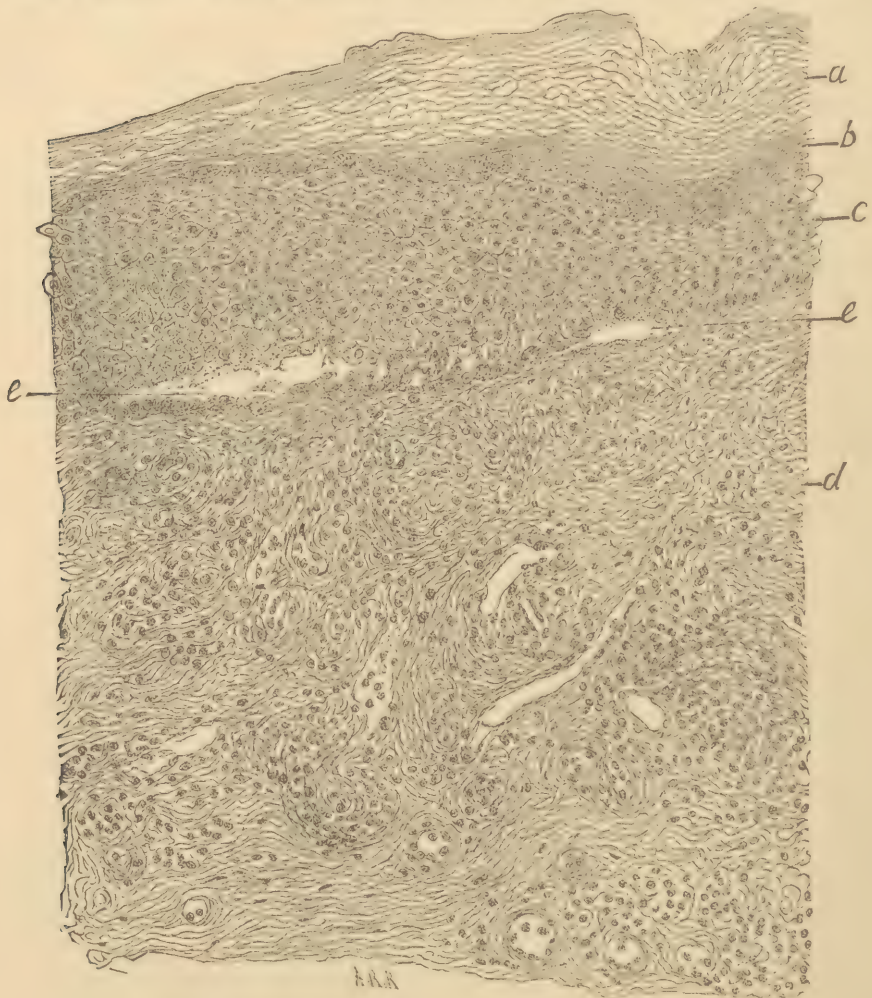


FIG. 5.—SECTION FROM A PATCH OF CHRONIC LICHEN PLANUS.

*a*, corneous layer ; *b*, granular layer ; *c*, rete ; *d*, corium ; *e*, microscopical vesicle.

this region corresponds to a follicle area. This deeper situation, in places, of the granular layer is also found in normal skin, particularly around sweat-ducts, and, in my opinion, does not represent an early change of the rete-cells. Directly over the vesicles many of the rete epithelia have an



indistinct outline, and some show a dilated transparent nucleus—changes caused by disturbance of nutrition consequent on the inflammatory process. In this drawing it will be noted that the round-cell infiltration is much less than in the recent lesions already described, while there is a marked increase in the size of the connective-tissue corpuscles. The cell infiltration extends also somewhat deeper than in recent lesions, although it did not extend below the parts represented in this figure. There is in this section the conditions produced by a chronic inflammation with round-cell infiltration, and but little serous exudation, consequently the epidermis would not undergo such degenerative changes as occur, for instance, in an acute eczema.

The limits of this paper will not permit me to enter more fully into a discussion of the anatomical changes to be seen in the previous sections, but enough has been described to obtain an idea of the nature of the process causing the lesions, and for purposes of comparison with the changes observed in lichen ruber.

I will now describe the appearances presented by sections of the skin containing the pin-head-sized white spots. These “pearls” have been



FIG. 6.—SECTION OF CHRONIC LICHEN PLANUS SHOWING THREE PEARLS.

*a*, corneous layer ; *b*, granular layer ; *c*, rete ; *d*, corium ; *e*, epidermic pearl ; *f*, round-cell infiltration ; *g*, orifice of sweat-duct.

described as lying in follicles—hair-follicles, I presume, have been meant. An objection to that view would seem to be the number of these “pearls” in a single pea-sized papule, a greater number than there probably is of hair-follicles in that sized area. Then I have never been able to find a hair just where a single “pearl” exists, still that would not be positive proof that they do not correspond to hair-follicles, as the hair could have already fallen out. The question is one to be settled by the microscope alone, and does not admit of solution by guessing no more than does the cause of the central depression.

In Fig. 6 is shown three “pearls” in one section. They are all situ-

ated in the pars papillaris and upper part of the corium. They appear to be separate from the rete, and there is no prolongation downward into the deep corium or the subcutaneous tissue, as would be expected to occur if they were connected with hair-follicles. The central part of each is made up of tissue similar to that of the corneous layer (*e*); outside of that is a dark layer similar to the stratum granulosum, and the peripheral part is similar to the rete. It will be observed that in each there is considerable space free of tissue, just as is often observed in the upper parts of the corneous layer. The corneous layer is thickened, as is also the granular layer and the rete. Toward the right side (*b*) the granular layer is much thicker than at the other side (*c*). There is a characteristic prolongation downward of the rete at four different places in the central part of the drawing, and in some of the sections I could trace a connection between these prolongations and the "pearls." In the corium there is but a limited round-cell infiltration.

In Fig. 7 are represented under the same power as Fig. 6 two "pearls," with a hair-follicle between them. The epidermis and corium show similar changes to those in Fig. 6. The smaller "pearl" has the same situa-



FIG. 7.—SECTION OF CHRONIC LICHEN PLANUS SHOWING TWO PEARLS, WITH A HAIR-FOLLICLE BETWEEN THEM.

*a*, corneous layer; *b*, granular layer; *c*, rete; *d*, hair-follicle area; *e*, round-cell infiltration; *f*, hair-follicle; *g*, sebaceous gland; *h*, corium.

tion as the three already described, but the larger one is not round but egg-shaped, and the small end extends to the corneous layer. The arrangement of the dried epithelium of the central part is like that of a dense corneous layer. The granular layer is very distinct in both these "pearls." Between these two epidermic nests is to be seen a small collection of cornified epithelium arranged in a somewhat similar manner, and surrounded with a very

thick granular layer and rete. It corresponds to a hair-follicle. It seems probable that a "pearl" could form at this place, but I have not in the dozen "pearls" that I have examined found any hair-follicle in connection with a fully developed "pearl."

In Fig. 8 are represented two "pearls," one of which is in direct connection with the corneous layer, and it can be readily seen that they have a similar structure as the epidermis, there being a direct continuation of the layers of the epidermis with the layer of the "pearl," and they showed



under the microscope similar structures. At the lower and left part of *d* is a small "pearl" commencing to form—at least I do not think that it represents a small section of a large "pearl." In this drawing a hair-follicle is well shown, and yet there are no signs of a "pearl" forming.

These three sections are all shown under a low power so as to give an idea of the situation of the "pearls," and to show as many as possible in

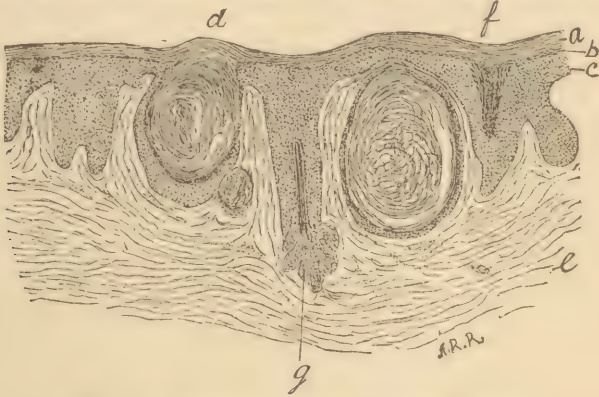


FIG. 8.—SECTION OF CHRONIC LICHEN PLANUS.

*a*, corneous layer; *b*, granular layer; *c*, rete; *d*, "pearl"; *e*, corium; *f*, sweat-duct orifice; *g*, sebaceous gland in connection with hair-follicle.

one drawing. A consideration of these figures shows that these epidermic collections do not correspond to hair-follicles or other gland structures of the skin, but are caused by growth downward of the rete and a transformation of the rete-cells to granular and corneous cells as in the normal process upon the free surface, or as occurs in a more or less perfect form in some cases of epithelioma. These figures also show that in chronic lichen planus the epidermis is thickened in all its layers, while the round-cell infiltration is much less than in the acute lesions. This is what is apt to occur in the ordinary inflammatory affections of the skin, the acute stage showing much cell infiltration and little epidermis formation, and *vice versa* in chronic inflammations. On the other hand, affections of the epidermis—hypertrophies—show more round-cell collection the greater the hypertrophy, as, for instance, in psoriasis and epithelioma. If in lichen planus the round-cell infiltration was caused by pressure from the epidermis, consequent upon the increase in its thickness, we should find it most marked in the chronic forms of the disease. To prove that a process is an epidermidosis, it must be shown that the primary changes occur in the epidermis, and this can only be done by examining the most recent lesions. Lesions of a few weeks' duration, for instance, showing a thickened epidermis, prove nothing if with this hypertrophy there are inflammatory changes in the vascular tissue beneath. Relying upon the great

amount of cell infiltration in recent papules, and the frequent slight epidermic changes, it seems to me that lichen-planus lesions owe their origin primarily to an inflammatory process taking place in the papillary layer and upper part of the corium, and that later the epidermis undergoes hypertrophy and aids in its formation. The small central depression depends upon the sweat-duct and the depressed center to a fatty degeneration of the round-cell infiltration and a flattening of the rete, together with, sometimes at least, a desquamation of the corneous layer over the central part.

I have examined the nerves by Weigert's method, but did not find any abnormal condition. Neither have I been able to find organisms, although inclined to believe that the lesions depend upon them.

*Treatment.*—The majority of dermatologists depend upon arsenic for the cure of the disease, but if we carefully study the results of this agent in the cases reported by its advocates it will be seen that its action is anything but prompt and decided, although in the majority of the cases there was considerable improvement produced, and some were cured. That it is of benefit in many cases no one can deny, but that it is a reliable remedy in all cases, or perhaps even in a majority, has not been my experience; and I find that some other observers hold similar views, for Tilbury Fox, for instance, says that many of his cases were made worse by its use. If the disease is a neurosis, one would expect to obtain benefit from it, but, although I have ordered it in almost every case that has come under my observation, the number of them cured by it has been very few indeed. Perhaps the result in my hands depended upon the amount given, as the dose ordered was the same as I prescribe for psoriasis—from fifteen to thirty-five drops daily, and I have lately read that it may be necessary in some cases to give sixty to seventy drops of Fowler's solution daily. If such doses do cure it, then my statement as to its value has no weight; but that is not yet settled. In New York city many persons suffer from malarial infection, and arsenic should benefit cases associated with that condition. Alkalies are of much benefit in some cases, and I have seen in rheumatic subjects the eruption disappear within a couple of weeks from the use of iodide of potassium and colchicum. Rapid improvement has been observed after using other remedies, but for the present discussion the value of arsenic and alkalies specially demand our consideration. If lichen planus and lichen ruber are similar diseases, depending upon the same ætiological factor, and lichen ruber the severer form of the disease, then arsenic should control the former disease, as it has a decided effect in the latter. Although I maintain that its action is frequently *nil*, nevertheless, even were it of benefit, that alone would not prove a similarity of ætiology between the two diseases, no more than it proves a relationship between lichen planus and psoriasis or pemphigus. The resistance of the



disease to arsenic in many cases, and the prompt cure of others by iodide of potassium or other means—remedies of no value in lichen ruber, as far as I am aware—show the results of similar methods of treatment in lichen ruber and lichen planus to be very different in the two diseases.

#### LICHEN RUBER.

According to the first description of lichen ruber given by Hebra, the eruption consists of millet-sized, isolated, conical, bright red or brown-red, firm papules situated around hair-follicles and covered on the apex with a fine, adherent, white scale. They afterward may become obtuse, and still later flattish in form. The papules are not arranged in groups, and preserve their original size during their entire existence, never increasing by extension at the periphery, the spread of the eruption always depending upon the formation of new papules similar in size and appearance to the already existing ones. As the eruption tends to extend and occupy the entire cutaneous surface, new lesions are continuously forming, and the skin becomes more and more occupied, until finally a certain area is completely covered by them, and the neighboring papules come in contact with each other. When this has taken place, the eruption appears as a red, infiltrated patch, covered with scales, and having a dry, rough, uneven surface. At the periphery of such a patch characteristic papules are always to be seen.

The eruption tends to extend and occupy the whole cutaneous surface, and, when this occurs, all signs of papule formation cease, and the skin appears everywhere reddened, thickened, furrowed, and covered with numerous thin, whitish scales. The skin of the face becomes dry, cracked, and scaly, the lower lids ectropic, the upper lids droop. The increased thickening of the skin appears especially upon the palms of the hands and the soles of the feet, where the eruption does not appear as papules, but as great thickening of the corneous layer. In consequence of this thickening, the fingers and toes stand apart from each other, half bent, and show, besides redness and infiltration, deep fissures and rhagades. Muscular movement is interfered with, especially at the joints, so that the patient can not keep the extremities fully extended or flexed without difficulty. When the eruption is general, the nails always become affected; they are greatly thickened from a deposit of nail-substance from the bed of the nail, are of a yellowish-brown color, very brittle, and have an uneven surface. If the deposit takes place from the matrix alone, then the nail consists only of a short, brittle plate which projects from the flesh.

The nutrition of the hairs at the seat of the disease *is always interfered with*, the hair becoming thinner and replaced by lanugo hairs.

Itching may be present, but it bears no relation to the extent of the eruption, and is much less than that accompanying many other skin-dis-

cases. The eruption appears without prodromal symptoms, and may exist on unexposed parts of the body without the knowledge of the patient.

*The general nutrition always suffers sooner or later*, and the patient passes into a marasmic condition and dies, unless he previously succumb to some complication depending indirectly upon this marasmic condition, as pneumonia, pleurisy, etc. Twelve of the first fourteen cases observed by Hebra died, and almost all subsequently reported, undoubted cases of this form of eruption of any duration have been associated with grave conditions of the general system, and showed the same tendency to lead to a marasmic condition.

Such are, briefly, the clinical characters of the disease in the cases observed by Hebra, and in the unquestioned examples of the same affection reported by subsequent observers. It has been suggested by some European writers that American dermatologists are not so familiar with this disease as they are, and hence our incorrect ideas of its relationship to lichen planus; but if the literature of the subject is studied, it will appear that the disease is probably just as frequent here as it is in other countries. In support of this statement I need only refer to the seven cases reported at the last meeting of the American Dermatological Association by New York dermatologists alone.

As in the case of lichen planus, so also in that of lichen ruber, we must, I believe, take into consideration, in doubtful cases, the whole symptoms and course of the eruption before making a diagnosis, for, as was stated by a reporter in the "Vierteljahrschrift" for 1869, in discussing the entity of this disease, too much weight must not be placed upon the appearance of the primary lesions, as the red, scaly papules alone are not characteristic of lichen ruber. The presence of acuminated papules, reddish in color, covered with a scale, and showing no tendency to change to vesicles or pustules, do not, in my opinion also, justify the diagnosis of lichen ruber. If lesions with those characters justified such a diagnosis, then the mistake of regarding cases of lichen scrofulosorum, lichen pilaris (Devergie), and even of lichen simplex (eczema papulosum), as examples of lichen ruber would be frequently made.

An acute form of lichen ruber has been described by Unna ("Zur Klinik u. Therapie des Lichen ruber," "St. Petersburg. med. Wochenschr.," 1884, No. 45; "Clinical History and Treatment of Lichen Ruber," "The Medical Bulletin," Philadelphia, 1885), but the eruption in the cases reported by him bore so little resemblance to that described by Hebra and by the other writers, who have seen undoubted cases of the disease, that, unless such cases were left untreated and watched so as to learn if they assumed later on the recognized characters of chronic lichen ruber, I do not think they should be accepted as examples of the disease. Just as the papules of syphilis may be indistinguishable from those of

lichen planus, so an acuminate scaly papule is not necessarily a papule of lichen ruber.

To make my position clear, I will quote from Unna's description of his cases:

"CASE I.—Miss M., aged seventeen, a Parisian, who had never suffered from any disease of the skin, was taken ill on January 5, 1881. Her illness began with a chill and a feeling of general indisposition and an itching eruption of the skin. On the following day the cervical and lateral regions of the neck were covered with a small papular, intensely red, itching eruption spreading upon both upper extremities and as far down the radial side of the forearm as the wrist-joint. The face, trunk, and lower limbs were entirely free. The light-red papillæ which it was said had appeared spontaneously were the size of a mustard-seed, light-red, shining, pointed like a ten-pin, and when not scratched off were covered with a small scaly elevation. . . . At no time was a transition from the papular to the vesicular stage noticeable, and scratching produced no other effect than the exfoliation of the scaly deposit of the papules. As the manifestations excluded the diagnosis of eczema papulosum, it could not be anything else than an acute attack of lichen ruber acuminatus." The eruption was treated with gauze compresses saturated with a solution of equal parts of liquor plumbi subacetatis and liquor aluminii acetatis, with a few drops of glycerin. In one week the patient was cured. In February a relapse occurred, symmetrical in appearance on both forearms near the wrist-joints, which disappeared in four days after the application of zinc ointment and acetate of lead.

In referring to this case, Unna states that "the points absolutely diagnostic of lichen acuminatus are the squamous nodules upon a non-flattened elevation, and located at the orifice of a hair-follicle."

In the other two cases reported by Unna, to prove the existence of an acute form of lichen ruber, the diagnosis was made from similar characters as in Case I, and in one of them the eruption was complicated by a moist eczema. For want of space, I must refer the reader to the original article by Unna for a full description of the cases.

In connection with these cases I will now quote from Tilbury Fox a description of lichen simplex, which corresponds to the eczema papulosum of German writers, and most other dermatologists: "In lichen simplex the papules are flesh-colored, red, smallish, sometimes very minute, more or less pointed, lasting a week or so, and followed by the development of others; the papules are usually seen on the back of the hands, outer aspect of the forearms, the neck, and the thigh. They are accompanied by a great deal of itching. The papules disappear by absorption, and *never become vesicles or pustules*. This form of lichen may last for weeks or months. As the lesions disappear there is slight desquamation. In lichen circumscriptus the papules are collected into round or roundish elevated patches, the border of the patch is well defined and papular, the surface



elevated, rough, and dry to the feel. The patches after a time get more or less scaly or inflamed, or cracked, simulating eczema, but never discharging. Their history, absence of moisture, and the dry, red, roughened base are distinctive. These cases are best treated by zinc and borax or borax and bichloride."

Vidal describes the lesions of acute lichen simplex as hard, firm, reddish elevations, rarely larger than a millet-seed, and containing no liquid. When *small they are acuminate or conical; when larger, flat, lenticular, or even hemispherical; the surface is dry, rough, and covered with small epidermic scales.* It lasts three weeks to a month, when the papules become paler, sink in, and the eruption terminates by a fine furfuraceous desquamation.

I have quoted these two excellent observers in order to compare their description of lichen simplex in general with the appearances described by Unna in his cases of acute papular eruption. Although Unna strongly repudiates the idea that his cases were other than examples of an acute form of the lichen ruber acuminatus of Hebra, yet it must appear to most dermatologists—and it has appeared to those writers who have referred to them—that they do not in any way bear a resemblance to that disease except in the form of the lesion; while in Case I, which I have quoted, the symptoms and character of the eruption bore a close resemblance to the lichen simplex of English and French dermatologists—a form of eruption which many American dermatologists also recognize as clinically sufficiently distinctive from papular eczema as to merit a special designation.

Following or agreeing with the views of German dermatologists that lichen simplex is merely a papular eczema, the character of the lesion depending probably more upon the nature of the tissue being injured than upon the nature of the factor producing the inflammation, and being familiar with such forms of eruption as those described by Unna, I must, with all deference to the views of this writer, state that I do not consider that his cases were other than examples of papular eczema. The absence of vesicles or pustules is no objection to that diagnosis, according to Fox and Vidal, and in the case of papular eczema I described in the earlier part of this article, although the body was covered with lesions, and they had already existed two weeks, none of the lesions had become vesicular. Consequently eczema can not be excluded upon the grounds given by Unna.

If such cases as those described by Unna are examples of lichen ruber, then we are all familiar with the disease, for such cases are not rare in America; but surely no one has considered them to be acute forms of that disease, and no one, to my knowledge, has seen an untreated case assume the chronic and dangerous form of eruption described by Hebra. Only

by the reporting of such cases by competent observers can any connection be shown to exist between the forms of eruption described by Unna and those described by Hebra, for the symptoms and course are too widely different to assume a relationship from a similarity in the morphology of the lesions, even if such a similarity exists.

From a study of cases of lichen simplex or papular eczema we see how closely the lesions resemble those of lichen ruber, and when we consider how not infrequent this eruption is met with, the necessity of care in diagnosis is very evident. I will return to this subject later. At present I only wish to draw attention to the similarity in the form of the lesions in lichen simplex and lichen ruber, and between lichen simplex and the acute papular eruption described by Unna, and the dissimilarity in history between the latter and lichen ruber. I wish particularly to draw attention to the fact that in lichen simplex small lesions are generally acuminate, and larger ones flattish in shape; hence, were a diagnosis to be made upon the form of lesion alone, a combination of large and small lesions in this disease would lead to the diagnosis of a combination of lichen planus and lichen ruber upon such a subject.

*Prognosis.*—In all the well-established cases of this disease, as reported by Hebra and others, there was a marked tendency to a fatal termination by marasmus or some intercurrent disease caused indirectly by this condition. That the disease can in many cases be cured by the administration of arsenic in proper quantity in no wise modifies the statement that the tendency of lichen ruber is to extend over the whole cutaneous surface and finally prove fatal.

*Histology.*—On account of the rarity of this disease, very few observers have studied the anatomy of the lesions. Hebra ("Lehrbuch der Hautkrankheiten," erster Band, zweite Lieferung, 1874, p. 391) states that, no matter how red the skin appears before death, it is found on post-mortem not to be thickened, but only pale, flabby, devoid of fat-tissue, and covered with a greater or less amount of scales. Under the microscope the hair-follicles are seen to be funnel-shaped, with the apex of the funnel downward, while the papillæ and papillary blood-vessels are enlarged.

Neumann ("Lehrb. d. Hautkrankheiten," Wien, 1880, p. 308) found the corneous and rete layers increased in size, the interpapillary portions of the rete enlarged and showing growth downward into the corium.

The papillæ were partly sunken and atrophied, and partly, especially at the periphery of the papule, enlarged, and contained broad-meshed elastic fibers. The blood-vessels were enlarged, and cell infiltration, especially around the blood-vessels, was observed. The excretory duct and the orifice of the sweat-glands were dilated and filled with epidermic cells. The cells of the external root-sheath of the hair at the base of the hair-follicle were increased and formed conical projections into the surrounding tissue, giving the hair-follicle the appearance of an acinous gland. The root of the hair had a brush-like form. The muscles of the skin were hypertrophied.

As Neumann describes atrophied papules as being present, it is evident that he examined lesions of considerable duration, and not the most recent ones. Nevertheless, his description is not that of an inflammatory process such as we have found to exist in lichen planus; neither do the drawings accompanying the text show any round-cell collection beyond the perivascular region, and even there but little is to be observed. This author was among the first to study both lichen ruber and lichen planus, and he refuses to accept the view that they are identical diseases.

Biesiadecki ("Untersuchungen aus dem pathologisch-anatomischen Institut in Krakau," Wien, 1872) does not consider that the changes described by Neumann as occurring in the sheath of the hair-follicles are characteristic of the disease, or a necessary part of the process, as he found normal follicles within the area of the lichen papules. According to this observer, the central part of the papule consists of atrophied papillæ, containing dense connective tissue and narrow and empty blood-vessels. Similar changes are present in the upper part of the corium. In both there are no cell elements to be observed. The rete corresponding to this central part is also atrophied. In the peripheral portion of the papule the papillæ are longer and broader than normal, and the tissue œdematous. Here and there are a few cells which look like exudation or connective-tissue corpuscles. The blood-vessels are enlarged. Similar changes are present in the upper part of the corium. The rete is thickened, and small hæmorrhages are sometimes found in the papillæ or in the rete. He also found colloid degeneration of the walls of the papillary blood-vessels.

Hans v. Hebra ("Die krankhaften Veraenderungen der Haut," Wien, 1884, p. 381), commenting upon the descriptions of Hebra, Hillier, Neumann, and Biesiadecki, considers that they show that the lesion depends upon changes in the epidermis, and that the so-called inflammatory symptoms are the result of a stasis in the capillaries. He regards the atrophy in the center as the result of pressure, as the blood-vessels are collapsed and empty. As hyperæmia was present only in the peripheral part of the papule, and no other condition except a slight œdema was observed, there



are no grounds for the view that the process is an inflammatory one. He considers that the process commences in the epidermis, and that any changes in the papillæ or corium and their blood-vessels are secondary to the pressure from the epithelia either upon the general surface or within hair-follicles or other gland structures.

Obtulovitz ("Beitrag zur Pathologie und Therapie des Lichen ruber exudat."—ref. in "*Vierteljahrsschr. für Dermat. u. Syph.*," 1877, p. 259) describes the microscopical appearances in a person upon whom the eruption was very general. He did not find the hairs affected in the manner described by Neumann. The millet-sized papules were covered with epithelium, which did not color in carmine. Ecchymoses were not infrequent under the epidermis. On the apex of the lesion there was usually a depression corresponding to a dilated hair-follicle orifice and containing a hair. The epidermis was thicker in this depression than elsewhere. The papillæ beneath the depression were atrophied, but outside of this region they were, perhaps, somewhat enlarged. An occasional exudation corpuscle was present beneath the mucous layer, but there were no emigrated corpuscles. In the true cutis the blood-vessels were dilated and filled with corpuscles and surrounded by a seam of exudation corpuscles. In the larger papillæ the blood-vessels were dilated and surrounded by exudation corpuscles.

In this case it will be observed that Obtulovitz describes an old papule, as the central part was already atrophied, yet there were but few inflammatory changes, and there is no proof that they were not secondary to the changes in the epidermis.

Köbner ("*Zür Pathologie des Lichen ruber*," "*Berl. klin. Wochenschr.*," 1887, No. 20) describes briefly the anatomical changes present in the skin of a patient who already had the disease about two years. There was much perivascular cell infiltration about the superficial and the deep network of blood-vessels, and, although less, yet a general infiltration of round and spindle-shaped cells, especially of the latter, in the whole cutis, the infiltration being greater in the upper than in the lower part of this structure. The corneous layer was thickened; there was an abnormal cornification of the slightly thickened rete. The papillæ were partly atrophied, the sebaceous glands from four to five times their normal size, and in some places there were signs of hypertrophy of the hair root-sheaths, while in other places there was atrophy of the hair-follicles and falling out of the lanugo hairs. This observer preferred not to rely too much upon the appearances seen in the sections, as the case was one of unusual severity, and I think every one will agree that the study of such sections can not enable an observer to form any positive opinion as to the primary character of the anatomical changes.

The authors whom I have quoted include, I believe, all who have

studied microscopically the changes in the skin in undoubted cases of lichen ruber acuminatus, and a consideration of the anatomical changes described by them shows that there is no special relationship between these changes and those already described as taking place in lichen planus. Even admitting that inflammatory changes as described by some are present at the earliest period of the papule formation, it can not be compared in intensity with the inflammatory changes in lichen planus, and yet clinically the disease is regarded as a much more severe affection than lichen planus; but no one has shown that inflammatory changes are present in the earliest stage of formation of a papule, and no observer describes as existing at any stage of the eruption such changes as are present in lichen planus. In the sections figured by Biesiadecki not a single exudation corpuscle is to be seen, and the drawings by Neumann show the round-cell collection to be slight in amount and limited to the perivascular region. From a careful study of the description and drawings by the writers quoted, I must agree with Hans v. Hebra that the circulatory disturbance is secondary to the changes in the epidermis, and that, in consequence of a downward pressure by this structure, there is produced an atrophy of the papillæ and an exudation and emigration from the blood-vessels. I will refer directly to the difference in the mode of formation of the atrophy in lichen ruber and in lichen planus.

I have studied recent and old papules from an undoubted case of lichen ruber acuminatus—that is, the case presented all the characters described by Hebra, and has been diagnosticated as an undoubted example of the disease by the different dermatologists who have seen it. The form of the lesions, their manner of arising and spreading, the extent of the eruption, the structures invaded, and the tendency to a marasmic condition, left no doubt as to the nature of the disease. In Fig. 9 is shown a section of a recent papule under a low magnifying power. The section includes some normal skin at both ends, and represents a section through an entire papule. The corneous layer is greatly increased in thickness in the region of the papule, the thickness being greatest in the central part, and diminishes in amount as the periphery is approached. This layer presents an irregular undulating character, the most depressed parts corresponding to the situations of sweat-gland or hair-follicle orifices. The epithelia are not arranged in flattened lamellar plates, as was often observed in lichen planus, but have often a more or less polygonal shape, with a vertical diameter as great as the horizontal one. This arrangement and character of the epithelia are well shown in Fig. 10. The stratum lucidum is not distinct, and the granular layer is not increased in thickness. The rete mucosum is slightly increased in thickness in some places, but usually there was no change in this layer. In some places it extended upward to an abnormal extent, and in other places the inter-

papillary portion probably extended somewhat downward into the corium, as seen by comparing this layer within the papule area with the same structure at the sides of the section. The changes in the rete, however, are neither marked in amount nor general throughout the lesion, for, as a rule, this layer seems to be normal. The papillary blood-vessels are slightly dilated and a few emigrated corpuscles can be seen in the perivascular area. There is no appreciable œdema of the connective tissue from inflammatory serous transudation. Some of the papillæ appear longer than

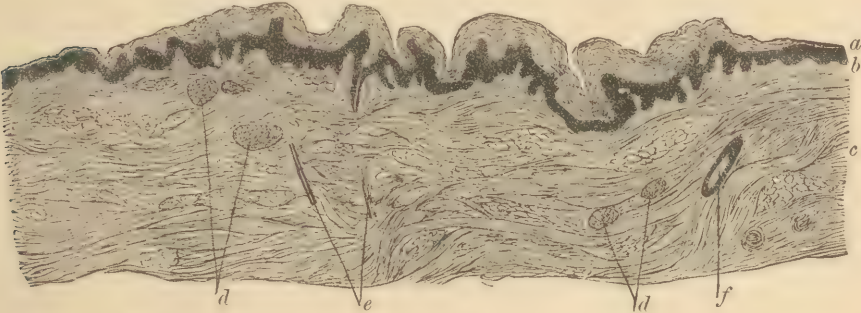


FIG. 9.—SECTION OF A RECENT PAPULE OF LICHEN RUBER.

*a*, cornuous layer; *b*, rete; *c*, corium; *d*, unstriated muscle-bundles; *e*, sweat-duct; *f*, hair-follicle.

normal from growth downward of the interpapillary rete. The corium is normal, except that there is slight dilatation of the blood-vessels and the presence of a few emigrated corpuscles in the perivascular area. The sweat-glands are normal, except that the orifice is dilated and filled with epithelia. The hair-follicles are unaffected, except at the orifice, where there is a large collection of corneous epithelia. The sebaceous glands appeared to be normal. The muscle-bundles are much hypertrophied.

The changes observed in the recent papule as here described point to the disease being an affection of the corneous layer of the epidermis—a parakeratosis and not an inflammatory affection of the corium. The amount of emigration and liquid transudation were altogether too little to justify the diagnosis of an inflammatory process.

In the older papules examined the condition showed a continuance of the process observed in the recent papules with consecutive degenerative changes leading to atrophy of the tissue. The corneous layer was much thicker than in recent papules, but the characters of its elements as regards shape, etc., were the same. Coloring with carmine showed a number of them, especially in the region of the orifices of the sweat-ducts and hair-follicles, to contain traces of a nucleus, granular or vesicular in character. The free surface was not provided with the dry, flat, squamous epithelia observed in normal epidermis. The rete mucosum was some-



what increased in size, and from its upper part sends projections toward the corneous layer. (See Fig. 10.)

This unevenness of the upper surface of this layer depends but slightly upon the rete mucosum itself, for it is to be noted that this layer



FIG. 10.—SECTION OF A PAPULE OF LICHEN RUBER WHICH HAD EXISTED SEVERAL WEEKS, MORE HIGHLY MAGNIFIED THAN IN FIG. 9.

*a*, corneous layer; *b*, rete mucosum; *c*, region of orifice of sweat-duct; *d*, corium; *e*, unstriped muscle-bundle (from the lumbar region).

is not specially increased in thickness where the projections exist. As the papillæ are not increased in size, at least to any marked extent, and the rete above them is not thicker than in other situations, it follows that the great unevenness of the upper part of the rete is produced by the hypertrophied corneous layer. This hypertrophy is greatest in the region of the orifices of the sweat-duct and hair-follicles, and there the corneous layer extends furthest downward. The rete-cells are not increased in size, and in many places are very small—a result, probably, of interference in their nutrition from pressure by the corneous layer. The granular and stratum-lucidum layers are not distinct. The interpapillary portions of the rete are increased in size in a few situations by growth downward into the corium, but this increase was never well marked. The changes in the form of the rete and in the form and thickness of the corneous layer are easily observed in Figs. 9, 10, and 11. In Figs. 9 and 11 it can be seen that the rete occupies a lower position in relation to the free surface than in the normal condition.

In the chronic lesions the cutis papillæ in the non-atrophied parts are not specially enlarged. The papillary blood-vessels are generally somewhat dilated, and a few emigrated corpuscles are present in the perivas-

cular area. Sometimes the number of emigrated corpuscles is considerable, but they are always collected in the immediate neighborhood of the blood-vessels, and are more abundant in the central portions of the lesion. Some of the papillæ are diminished in size by the downward pressure from the epidermis. The structure of the corium is normal, except in the blood-vessel area. The majority of the blood-vessels are dilated and surrounded by a variable number of emigrated corpuscles. This dilatation and emigration were much greater than in recent papules, but not more than would result from such changes as have been described as occurring in the epidermis. By comparing Fig. 11, in which this dilatation and emigration and normal intervascular tissue are shown, with Fig. 5, which represents the condition in chronic lichen planus, the difference in the anatomical changes is very striking. The condition in Fig. 11 can scarcely be considered as the result of a primary inflammation of the part. The unstriped muscle-bundles were always greatly hypertrophied. Some

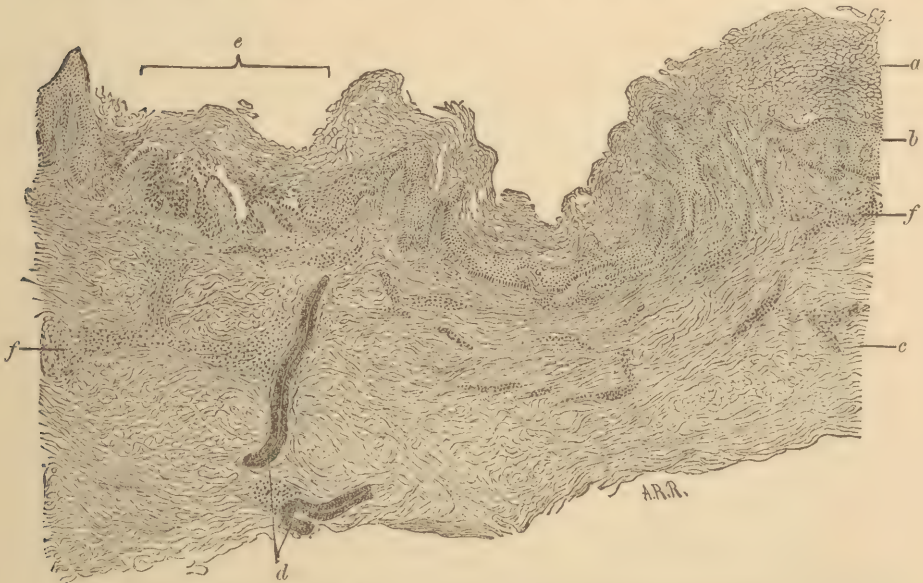


FIG. 11.—SECTION OF AN OLD PAPULE OF LICHEN RUBER WITH ATROPHIED CENTER.

*a*, corneous layer; *b*, rete mucosum; *c*, corium; *d*, sweat-duct; *e*, atrophied part of papule; *f*, perivascular round-cell infiltration.

hairs showed hypertrophy of the external root-sheath, and others were normal. The sebaceous glands were well developed, but it is difficult to decide when such a structure is hypertrophied, as the normal size varies so greatly.

In old papules a retrograde process—an atrophy—often occurs, and it

is interesting to study the character of this atrophy and compare it with the changes which occur in lichen planus. In Fig. 11 is shown a section from an old papule in which an atrophic process was taking place.

The corneous layer of the atrophied part differed from that of the rest of the lesion in that the epithelia were flattened and arranged more in a lamellar form, and there was no sharp line of separation between this layer and the rete. The cells of the rete did not color so well in hæmatoxylin, and were frequently no longer united with each other, in consequence of which the sections often showed spaces devoid of cells in this layer, the cells perhaps having fallen out from the manipulations incident to preparing the sections. A peculiar condition was the adhesion of the first row of cells to the connective tissue of the papillæ, as seen in Fig. 11. Judging from the appearances of this layer, and the action of staining agents upon the elements, it was clear that the cells had undergone a simple atrophy. The papillæ were smaller than normal, and blood-vessels or exudation corpuscles could not be detected in the smallest ones. The corium directly beneath showed more "inflammatory" changes than in other parts of the lesion, as there was a considerable number of emigrated corpuscles in the perivascular region; nevertheless, the appearances did not suggest in any part a primary, active inflammatory process.

When atrophy occurs in a lesion of lichen planus it is the result of a fatty degeneration of the round-cell collection in the corium, just as it occurs in a papular syphilide. In many of the papules of lichen planus the round-cell infiltration is so dense and the inflammatory changes in the tissue are so great that the normal tissue of the part is destroyed; consequently, when the infiltrated cells undergo degeneration, an atrophy of the part results. When a lesion of lichen ruber undergoes atrophy the process, according to my sections as well as those of Biesiadecki, is one of simple atrophy from pressure, and affects primarily the rete and the papillary portions of the corium, so that the atrophic process in the two diseases is entirely different in ætiology, nature, and anatomical seat.

According to my observations, as above described, lichen-ruber lesions owe their origin primarily to changes taking place in the corneous layer, and are not due to an inflammatory process. In the recent papules I found but slightly dilated blood-vessels, and few if any emigrated corpuscles, while the corneous layer was greatly hypertrophied. It is true that in the older lesions there was more dilatation and more emigration present, but not more than would usually be present as a secondary condition to such changes as were found in the corneous layer. Dilated blood-vessels and the presence of emigrated corpuscles may denote an inflammatory process in the skin, but, unless this process is primary and not secondary to other pathological conditions, the lesions with which it occurs are not to be classed as inflammatory in origin. If the lesions of lichen ruber



were inflammatory in their origin, the changes in the corneous layer would require to be a secondary and resultant condition of the nutrition changes consequent on the inflammatory process. The microscopical examination, however, seems to show that the primary and principal changes occur in the corneous layer; that the other changes are slight in comparison, and evidently result from the former; and, furthermore, that such changes as occur in the corneous layer are never the result of an inflammation. An excessive production of corneous cells may, by pressure upon the rete epithelia, produce indirectly a thickening of this layer as occurs, for instance, in callositas. This continuous pressure upon the rete and underlying cutis—a pressure which increases in amount until the papule has reached its acme of development—is a sufficient and plausible explanation for the occurrence of the circulatory changes and atrophy in older papules.

The lesions of lichen ruber, then, are not inflammatory in origin, but arise as the result of a parakeratosis; there is a hypertrophy of the corneous layer from a continuous collection of epidermic cells, the result of an anomaly in the process of their production and casting off, and these cells by pressure upon the underlying tissues produce the changes occurring in the rete and corium. In lichen planus the lesions were considered to owe their origin to a circumscribed inflammation in the papillæ and upper part of the corium, and any changes in the rete or corneous layer to be secondary to the changed nutritive conditions the result of the inflammatory process. If the conclusions from my observations are correct, there is certainly no relationship between the factors producing the eruptions in lichen ruber and lichen planus.

*Treatment.*—Arsenic, when given in the proper amount, seems to have a decided and prompt action in this disease. Under this method of treatment the disease has lost some of the grave significance it formerly possessed, when twelve of the first fourteen cases reported by Hebra proved fatal. As far as known, it is the only remedy which seems to have a beneficial effect, although it is not probable that many methods of treatment have as yet been tried in this disease. That alkalies or the iodide of potassium would act as they sometimes do in lichen planus has not been shown.

From a study of the symptoms, form of the lesions, histology, prognosis, and results of certain methods of treatment, it is evident that there is almost absolutely no resemblance between the two forms of eruption described as lichen ruber and lichen planus.

In lichen ruber the papules are acuminate, covered with thin scales, itch but little, are not grouped, do not subsequently increase in size or even spread in a serpiginous-like form, and the eruption tends to extend over the whole cutaneous surface and to attack the hair structures and nails. The disease also tends to terminate fatally by producing a marasmic condition or some dependent intercurrent affection.

In lichen planus the lesions are usually flattish, shining, without scales, grouped, more or less angular in outline with a depressed central part, itch much, and show no tendency to become general over the body or to affect the hair or nail structures. The primary individual lesions also can, subsequent to their appearance, increase in size, and the eruption on certain parts of the body, especially upon the penis, may spread in a serpiginous manner, like in syphilis.

It has been maintained that the different anatomical situations of the lesions would account for differences in character of the two forms of eruption; but if the appearances of a patch of lichen planus which has invaded hair-follicles be studied and the absence of scales or acuminate lesions noted, and, further, if the lesions of the two diseases be studied upon the palms, it would be evident that this view has no good foundation.

Lichen planus has been also regarded as a mild form of lichen ruber—upon the ground, I suppose, that the one tends to a fatal termination, and that the other never affects the general health, the difference in the prognosis depending, perhaps, upon the mode of living in the different cases or upon the climate. That it can not be a matter of difference in intensity of the pathological process is shown not only by the difference in the nature of that process in the two forms of eruption, but also upon the benign character of the most extensive and acute cases of lichen planus. All microscopical observations show that the lesions of lichen planus owe their origin to an inflammatory process, while those of lichen ruber depend upon a parakeratosis. Later observations will show, I believe, a different ætiological factor, for the cause of the lesions will no doubt be learned ere long. That the difference in climate accounts for the difference in the gravity and character of the eruption was maintained when it was thought that lichen ruber did not occur outside of Germany; but since several cases have been seen in America, and all have shown the same characters and tendencies as those seen in Germany, that argument falls to the ground. But, even if it were true that the disease lichen ruber does not exist in a severe form outside of Vienna, any so-called mild form observed in other countries could represent only a less intense form of the same pathological process, and, as we have seen above, that can not be the case, as the primary process in the two forms of eruption is of a totally different nature. It is true that conditions of climate and mode of living do have an influence upon certain skin diseases, although not to the extent generally believed. Those who have seen lupus vulgaris in Vienna and in America must have observed the milder character of the disease in this country as a rule, depending probably upon the better diet of the laboring classes here and consequent better state of nutrition of the tissues invaded by the bacillus tuberculosis; but the difference in symptoms is only one of

degree; the situation, the appearance of the primary papules, the clinical symptoms to a great extent, the pathological histology and treatment, are the same, and even some of the cases here are as severe as any observed in Germany.

In the acute cases of lichen planus in which the eruption is more or less general it is strange that the disease shows no tendency to attack the hair or nail structures, or to endanger life, if the ætiology is the same as that of lichen ruber. Then there is the affection of the mucous membrane in lichen planus to be considered. In cutaneous diseases I think one expects that the mucous membrane, if it may be affected, suffers in the severer cases and escapes in the milder forms of the special disease; but here it is affected in lichen planus and not in lichen ruber. The same statement is true of the hair and nails as of the mucous membrane.

Those who have read Kaposi's recent paper on "*Impetigo Herpetiformis*" will remember what value he placed upon the character of the primary lesion and the course of the disease—that is, its tendency to a fatal termination; and I think these points should be fully as much considered and have as much weight in the question of relationship between lichen ruber and lichen planus.

Admitting, then, what scarcely admits of discussion or difference of opinion, that the clinical symptoms, prognosis, and histology of the two forms of eruption are entirely different, then they must also be considered as representing two different diseases unless it can be shown that the one form can change to the other, or that there is a tendency to a combination of the two forms upon the same person, or that in recurrences of the disease there is an exchange of form.

We all know the appearance sometimes presented by a psoriasis papule in consequence of sweating or washing having removed the scales from the lesion. The same thing may occur with a papule of lichen ruber, but that does not change it to a papule of lichen planus, even if it then resembles the latter more than an unchanged one of the former. Further, we have learned that what forms an elevated papule where the epidermis is thin does not produce the same form of lesion where this structure is thick, so that the presence of flat papules upon the palms and soles, in connection with acuminated lesions upon the rest of the body, does not show a combination of lichen ruber and lichen planus. Large lesions of that not infrequent disease lichen simplex (*eczema papulosum*) could easily be present in a case of lichen ruber and lead to error in diagnosis unless the life-duration and other characters of the lesion be studied, for we have already learned that these lesions are flattish and may be angular in outline and have a depressed center. Unless, therefore, in a case of undoubted lichen ruber, other lesions existed which corresponded in their symptoms and course—not a single lesion, but several—with the lesions of



ordinary lichen planus, a diagnosis of a combination of these two diseases should not be made. *Such a case has not yet been reported.*

We have seen that the lesions in lichen simplex (eczema papulosum) may resemble exactly those of lichen ruber, but the symptoms and course of the two diseases are entirely different; hence the presence of acuminate papular lesions covered with a thin scale does not alone justify the diagnosis of lichen ruber, and the presence of such lesions in association with the lesions of an undoubted case of lichen planus is no proof of a combination of the lesions of the two forms of eruption. The symptoms and course of the disease and of the eruption must be taken into consideration and given due weight in forming a diagnosis. Considering the rarity of lichen ruber, if a case of this disease was reported in which the characteristic eruption of both lichen ruber and lichen planus was present—not as regards form and color of lesions alone, but in all other respects—then the upholders of the view that the two forms of eruption have a similar ætiology—that is, that lichen ruber and lichen planus represent but two forms of the same disease—would have a strong argument in favor of their opinion. After a careful study of the literature of the subject, I do not find that such a case has been reported—that is, a case that will stand a careful analysis, subject to the above conditions as evidence of the character of the eruption.

I will not enter into a discussion of the division of lichen planus into *lichen planus proper* and *lichen obtusus*, and the association of the two forms of lesions upon the same subject as described by Unna, as no one doubts this association and dependence of the obtusus and planus lesions upon the same ætiological factor, although for reasons already given I can not consider that they represent two different varieties or forms of eruption—that is, that they require separate descriptions.

In denying the existence of proof of combination or relationship between lichen planus and lichen ruber in the cases reported by different observers as proof of such relationship, it is proper that I give evidence in support of my position and the reasons for not accepting the conclusions of those with whom I disagree. In criticising and refusing to accept the diagnosis of the cases hitherto reported as showing a combination of lichen ruber and lichen planus upon the same person at the same time, I rely upon the necessity of the presence of the conditions already described as positive proof of the existence of the one or the other form of disease, for I must maintain that a diagnosis can not always be made from the form of the lesions alone, even when a considerable number of them are present and situated on the usual regions for the disease, and certainly should not be made when the lesions are few and seated in unusual situations for that disease. The positive proof of identity of origin rests upon those who hold that view, for too many cases of pure uncomplicated lichen planus have

been observed and studied to justify the view that there is a *tendency* of this form to change to lichen ruber; and, although the number of reported cases of lichen ruber is still small, yet these cases have shown no *tendency* to change to lichen planus. If such a tendency exists in the case of either disease, surely it would have occurred many times in the great number of cases of lichen planus observed in America; but an undoubted case of such a change has not been reported.

The question seems to me to be no longer one as to whether there is a tendency to change from one form to the other form, but whether such a change or a combination of the two forms of disease has ever been observed; and yet if a solitary case of change or combination should occur, that could scarcely be accepted as proof of identity of origin, as such an occurrence could be an accidental one, just as we sometimes see eczema or syphilis or some other cutaneous disease in combination with lichen planus upon the same subject. The combination should be a more or less frequent one to justify the view of a probable similarity in origin.

A transformation of the individual lesions of lichen planus into those of lichen ruber and *vice versa*, with a corresponding transformed clinical history and course, would be convincing evidence of relationship; but I am not aware that any one has even thought that he has observed such a process. Although I say that such an observation would have much weight in the formation of an opinion in this instance, yet even such a case as transformation of lesions in some diseases does not of necessity prove similarity of origin. How often do we read of epithelioma developing from lupus vulgaris? Yet no one can maintain that the two diseases have aught in common either as regards the character of the morbid process or of the factors producing the anatomical changes; in fact, a transformation does not occur.

Thus we see what difficulties surround the question of relationship, and with such difference in the clinical symptoms and course of the two diseases, I doubt if any relationship would have ever been imagined if different terms had been employed by Wilson and Hebra to designate the eruptions. This similarity in nomenclature has been the cause of similar discussions regarding lupus vulgaris and lupus erythematosus, and parasitic and non-parasitic syphilis, as is now carried on concerning lichen ruber and lichen planus.

But to return to a criticism of the statements of the advocates of a relationship between lichen ruber and lichen planus. G. Behrend (*Lehrbuch der Hautkrankheiten*, Berlin, 1883) says they often change the one into the other form, but the statement is simply an assertion, as he reports no cases and offers no proof. Kaposi (*Pathologie und Therapie der Hautkrankheiten*) describes lichen ruber and lichen planus as two different forms of the same disease, and states they may occur in combination, but

he does not describe such a case. Boeck suggests that he has not described or reported such a case because it is such a frequent occurrence, and consequently it is only necessary to mention it without giving the proof. Boeck ("Einige Beobachtungen über Lichen ruber in Norwegen," "Monatsh. f. pr. Dermat.," 1886, No. 10) further states that the two forms are frequently seen in combination, especially in Austria and Germany. When we consider how few cases of lichen ruber of Hebra have been seen in Europe during the last few years—perhaps not ten cases in as many years—we can only wonder at such a statement. He reports two cases as showing such a combination, although he had seen but seven cases of lichen (he includes both forms together). The following is a condensed report of Case III of his article: "Male, aged thirty years. Eruption commenced ten years ago on both legs below the knee. At present there are on the external surface of the lower part of the thigh numerous large papules and patches, the majority of which are larger than a pea in size, and a few three to four centimetres in diameter. The papules and patches are of a bluish color, and, while the pea-sized papules are sharply limited and rather flattish on the surface, the patches are of irregular form, not sharply limited, and covered with a thick, rough, uneven corneous layer. The patches are considerably elevated, and the skin in this situation feels thicker and harder than normal, and a slight furfuraceous desquamation is present. At the periphery of the patches are a few very small, red, flat papules like the primary lesions of lichen planus. On the external surface of the lower part of the left thigh were a few characteristic flat papules; on the inner surface of the lower part of the left thigh there were a few pea-sized bluish patches. Finally, on the flexor surfaces of both forearms were ordinary papules of lichen planus. Fowler's solution was given for nine months, when the eruption on the arms disappeared, and that upon the legs was somewhat less. At the end of this period there appeared upon the back and abdomen a large number of isolated, small pin-head-sized, prominent, acuminate, red lesions situated at a hair-follicle orifice. Examined with a lens, the surface was *flat* and *shining*, and a hair could often be seen in the center, and around these could often be seen a few small epidermis scales. The youngest lesions are bright-red and prominent, the older ones brown-red and more sunken in. The outbreak was accompanied with pretty severe itching." A further description of this case is not necessary, as the above report is sufficient to show that the acuminate lesions were not those described by Hebra. Papules with a shining surface and devoid of scales are not the papules of lichen ruber.

In the other case (Case VII) the eruption commenced behind the right malleolus as a single flat papule. Later, other smaller papules formed around this one, and within a few months there was a symmetrical



eruption behind both internal malleoli, on the inner surface of the lower part of both thighs, on the volar surface of the wrist, and on the forehead. In about six months the lesions around the malleoli disappeared, but on the right hypochondrium there were two lentil-sized, bright-red, flat, shining papules, and similar ones were present on the forehead near the margin of the hair, and a single bright-red, hemp-sized flat papule on the back of the right hand. On the anterior and external side of the lower part of both thighs there were a few acuminate, milium-sized, bright-red, shining papules. On the apex of these there was generally a hair, and on the others a small epidermic plug, containing a rolled-up hair, could be scratched off. In this case, as above reported, I find no positive proof that the patient had a lichen planus, but, even if he had, the acuminate lesions were not those of lichen ruber, and were probably those of an eczema—a perifolliculitis pilorum.

As I can not accept the diagnosis of Unna's cases of lichen ruber as examples of the disease described by Hebra for reasons already given—and I am not aware that they have been accepted by any dermatologist—I need not analyze his reported cases of combination of acuminate with flat or obtuse lichen lesions.

If we continue our search among German authors for proof of a relationship or combination of the two forms of lesions, we do not find a single case reported which will stand any criticism—that is, that shows the existence of two forms of lesions upon the same person, and each form, if alone, having all the necessary characters for the diagnosis of lichen ruber or lichen planus, as the case might be. And yet, upon the evidence of such cases as I have just quoted, the belief seems to be almost universal among German dermatologists that lichen ruber and lichen planus are but two forms of the same disease. It is true that the original observers of the two forms, Hebra and Wilson, regarded them as similar diseases, but they never gave any reasons for their belief, and it is a question, I think, if Wilson ever saw a case of lichen ruber, or Hebra one of lichen planus which he recognized as such, when they gave their views on the relationship of these eruptions.

In France they do not know the lichen ruber of Hebra, as I believe no case has been, as yet, observed in that country; but Brocq ("Sur le lichen ruber," *Annales de Dermat.*, 1886, p. 389) states that a combination of lichen acuminatus and lichen planus is well recognized, and cites what he calls an excellent example of this combination from the thesis of Lavergne. As this case is referred to as especially proving a relationship between the two forms of eruption, I will quote the principal portions of it as given by Lavergne in the original ("Thèse de Paris," 1883) thesis.

CASE VII of Thesis.—Patient aged fifty years, female. Nine years ago had a similar eruption to the present one, and was treated by arsenic and starch

baths. The treatment benefited her considerably, and later the eruption disappeared. Five months ago it reappeared as itching lesions about the size of a pin-head, and situated especially about the waist.

*Present Condition.*—The eruption, which is present over almost the whole body, does not present everywhere the same characters. The head is free. *Left hand:* The eruption only occupies the dorsal surface of the wrist, and consists of papules and macules. The papules are of a very pale red, almost yellow, are round, rough to the touch, of the size of a pin-head or of a grain of hemp, little or not at all itchy. They are isolated, nevertheless they tend to arrange themselves in circles, the center of which is occupied by the macules. On the dorsal surface of the right hand the papules present the same general characters. *Left forearm:* The eruption is specially marked on the anterior surface of the forearm. Some of the papules are isolated and others grouped. The isolated papules are flat, shining, of similar size to those on the wrist, yellowish, and slightly elevated above the general surface. In the center of some of them there is a small black point, which appears to be the obliterated orifice of a hair-follicle. The margins of the polygonal papules are in connection with the little furrows visible on the surface of the epidermis. There is, properly speaking, no desquamation. The isolated papules afterward form patches. The latter have a darker and redder color. They have an irregular form and itch very much. There is some desquamation, and the skin is slightly thickened. Only a few papules are present on the posterior surface of the forearm. *Right forearm:* The lesions present the same characters. They tend to arrange themselves in circles or half-circles. At the right elbow there are several isolated papules of a shining coppery color and larger than those already described. *Left arm:* The external surface is free. On the internal surface the papules are isolated, very numerous, very brilliant, itch greatly, and are disposed in lines following lesions produced by scratching. On the right arm the seat of the eruption is the same, and appears duller.

On the thorax, from the breasts, the eruption has no longer the same character. Here the papules are very numerous, as large as a pin-head, acuminate, *of the same color as the rest of the skin, and covered on the summit with a black point or a small whitish filament (sebaceous matter).* giving to the touch the sensation of a series of closely seated and pointed rough objects. There is no itching and *no desquamation*. In the center of this eruption there are a few disseminated papules of lichen planus. Patient says that she was rubbed with croton oil four months ago. She had previously no eruption on the thorax. On the abdomen a few papules of both forms are present. Over the hips, the kidneys, and the sacral region the eruption is confluent. While over the hips only lichen-planus lesions exist, over the kidneys and sacral regions both forms are present. The papules, however, are browner and deeper in color, and drier and rougher. Itching feeling is here very active, especially during the night. *There is no desquamation or thickening of the skin.* On the right leg, along the ridge of the tibia, are almost coppered-colored patches, which have existed four to five years. Some of them are perfectly smooth, a little whitish in the center; others have an uneven surface. On the dorsal surface of the foot the little

lesions, few in number and disseminated, have the same color as tubercles of lupus. The patient *has a good appetite*, is not dyspeptic, the intestinal functions are normal. *The general condition is good.* The patient complains only of sleeplessness, caused, she says, by the itching. She remained in the hospital about three weeks, and was treated by three drops of Fowler's solution after each meal, and her condition upon leaving was as follows :

On the forearms the papules had partly disappeared. There was flattening of the papules on the breast, with *little or no consecutive pigmentation.* On the waist the lesions were disappearing. Over the tibia isolated papules could no longer be distinguished, but where they had existed the skin was deeply pigmented with a well-marked reddish brown.\*

While this patient had undoubtedly lichen planus, she certainly did not have lichen ruber, for the acuminate lesions present upon the breast bore no resemblance to the lesions of the disease lichen ruber. The lesions of lichen ruber have no black points upon the summit and no sebaceous matter, and are not of the color of the normal skin, but are red in color and covered with a scale—in a word, the lesions in this case should never have suggested the eruption described by Hebra. The report of this case shows how careful an observer should be in making statements as to the cause of objective characters. The small black point in the center of some of the papules is traced to an obliterated hair-follicle, although no sections were made to justify the assertion. Several of the earlier authors who wrote upon lichen planus state that a little depression corresponding to the orifice of a hair-follicle can be seen in the center of the flattened papules. Correct observation with the microscope has shown that the hair-follicle has nothing to do with the formation of the central depression of these lesions; but if it were the cause, the "guesser" would claim priority of observation. The simple statement that a central depression frequently exists is a safer form of description.

And so throughout the whole list of cases reported as showing an identity of ætiology there is not one that will stand analysis.

To show, however, how easily cases can be honestly reported as showing this identity of ætiology and yet be of more than doubtful value, I need but mention a case recently shown by Dr. G. H. Fox before the New York Dermatological Society. Two of the members of this society, who believe in a relationship between the two forms of lesion, maintained that both forms of disease were present, while all the other members denied that any lesions of lichen planus were present. The point, however, I wish to make is this, that if this case had been reported by one of the two gentlemen it would have been quoted as a proof of the relationship of the two forms of eruption.

Finally, in the experience of the members of the American Dermato-

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\* The Italics are my own in the above quotation.



logical Association, I am not aware that a single member has ever seen a case of lichen planus become changed to one of lichen ruber with all its symptoms and tendencies. This question was asked last year (1888) in Washington, and no member present had observed such a case, and it should be borne in mind that the combined experience includes the observation of probably several hundred cases of lichen planus. If such cases have not been observed, I must maintain that there exists no proof that the two forms of eruption depend upon the same ætiological factor—that is, that lichen ruber and lichen planus are but two forms of the same disease.

From the above argument and observations I would draw the following conclusions :

1. In doubtful cases lichen planus and lichen ruber are to be diagnosed, not by the form of lesion alone, but also by the whole symptoms and course of the eruption.

2. That lesions resembling in form those of lichen ruber and lichen planus exist in other diseases.

3. That Unna's division into lichen planus, lichen obtusus, and lichen acuminatus is an unnecessary if not an incorrect division.

4. That the cases reported by Unna were not examples of the disease described by Hebra.

5. That the same is true of the cases reported by Boeck and Lavergne.

6. That no cases have been reported which show absolutely, or even with probability, that lichen ruber and lichen planus are but two forms of the same disease.

7. If an identity of ætiology existed, such cases could have been reported, as lichen planus is a rather frequent disease.

8. Finally, in the absence of proof of a tendency to a combination of the two forms of eruption or to a transformation of the one form into the other form either as an eruption or of individual lesions, and, from the fact that the symptoms, course, prognosis, histology, and, to a certain extent at least, the effect of certain drugs upon the eruption are different, there appears to be no good ground for the view that there is any relationship between lichen ruber and lichen planus.

#### EXPLANATION OF THE COLORED DRAWINGS.

FIG. 1. CHRONIC LICHEN PLANUS OF THE LEG.—This patient, a male, had the scaly form upon the legs and the papular form upon the forearms. He was treated several months with arsenic. The eruption disappeared upon the arms, but that upon the legs was unaffected by the treatment.

FIG. 2. CHRONIC LICHEN PLANUS OF THE RIGHT KNEE REGION.—This patient, a female, was treated many months with arsenic, without benefit. There was some eruption upon the left leg, and many lesions around the waist.

FIG. 3. LICHEN PLANUS OF THE SCROTUM AND PENIS.—The eruption upon the scrotum had lasted eighteen years. He had lesions upon other parts of the body. The eruption upon the penis extended in a serpiginous manner as an infiltration without the formation of papules.

FIG. 4. CHRONIC LICHEN PLANUS OF THE ANKLE.—Same patient as Fig. 3. Figs. 3 and 4 show unusual forms of the disease. Fig. 3 should be viewed under an oblique light.

248 WEST FORTY-SECOND STREET.

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